



SEQUENCE LISTING

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<120> METHOD FOR IN VITRO DIAGNOSIS OF ENDOMETRIOSIS

<130> SCH-1789

<140> 09/961,403

<141> 2001-09-25

<160> 15

<170> PatentIn Ver. 2.1

<210> 1

<211> 2386

<212> PRT

<213> Homo sapiens

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Gly	Ser	Arg	Gly	Phe	Asn	Cys	Glu	Ser	Lys	Pro	Glu	Ala	Glu	Glu	Thr
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Cys	Phe	Asp	Lys	Tyr	Thr	Gly	Asn	Thr	Tyr	Arg	Val	Gly	Asp	Thr	Tyr
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Gln	Cys	Ile	Cys	Thr	Gly	Asn	Gly	Arg	Gly	Glu	Trp	Lys	Cys	Glu	Arg
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Gln	Trp	Leu	Lys	Thr	Gln	Gly	Asn	Lys	Gln	Met	Leu	Cys	Thr	Cys	Leu
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Cys	Thr	Asp	His	Thr	Val	Leu	Val	Gln	Thr	Gln	Gly	Gly	Asn	Ser	Asn
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Gly	Ala	Leu	Cys	His	Phe	Pro	Phe	Leu	Tyr	Asn	Asn	His	Asn	Tyr	Thr
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Ala	His	Glu	Glu	Ile	Cys	Thr	Thr	Asn	Glu	Gly	Val	Met	Tyr	Arg	Ile	465	470	475	480
Gly	Asp	Gln	Trp	Asp	Lys	Gln	His	Asp	Met	Gly	His	Met	Met	Arg	Cys		485	490	495
Thr	Cys	Val	Gly	Asn	Gly	Arg	Gly	Glu	Trp	Thr	Cys	Ile	Ala	Tyr	Ser		500	505	510
Gln	Leu	Arg	Asp	Gln	Cys	Ile	Val	Asp	Asp	Ile	Thr	Tyr	Asn	Val	Asn		515	520	525
Asp	Thr	Phe	His	Lys	Arg	His	Glu	Glu	Gly	His	Met	Leu	Asn	Cys	Thr	530	535	540	
Cys	Phe	Gly	Gln	Gly	Arg	Gly	Arg	Trp	Lys	Cys	Asp	Pro	Val	Asp	Gln	545	550	555	560
Cys	Gln	Asp	Ser	Glu	Thr	Gly	Thr	Phe	Tyr	Gln	Ile	Gly	Asp	Ser	Trp		565	570	575
Glu	Lys	Tyr	Val	His	Gly	Val	Arg	Tyr	Gln	Cys	Tyr	Cys	Tyr	Gly	Arg		580	585	590
Gly	Ile	Gly	Glu	Trp	His	Cys	Gln	Pro	Leu	Gln	Thr	Tyr	Pro	Ser	Ser		595	600	605
Ser	Gly	Pro	Val	Glu	Val	Phe	Ile	Thr	Glu	Thr	Pro	Ser	Gln	Pro	Asn	610	615	620	
Ser	His	Pro	Ile	Gln	Trp	Asn	Ala	Pro	Gln	Pro	Ser	His	Ile	Ser	Lys	625	630	635	640
Tyr	Ile	Leu	Arg	Trp	Arg	Pro	Lys	Asn	Ser	Val	Gly	Arg	Trp	Lys	Glu		645	650	655
Ala	Thr	Ile	Pro	Gly	His	Leu	Asn	Ser	Tyr	Thr	Ile	Lys	Gly	Leu	Lys		660	665	670
Pro	Gly	Val	Val	Tyr	Glu	Gly	Gln	Leu	Ile	Ser	Ile	Gln	Gln	Tyr	Gly		675	680	685
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Pro	Val	Thr	Ser	Asn	Thr	Val	Thr	Gly	Glu	Thr	Thr	Pro	Phe	Ser	Pro	705	710	715	720
Leu	Val	Ala	Thr	Ser	Glu	Ser	Val	Thr	Glu	Ile	Thr	Ala	Ser	Ser	Phe		725	730	735
Val	Val	Ser	Trp	Val	Ser	Ala	Ser	Asp	Thr	Val	Ser	Gly	Phe	Arg	Val		740	745	750
Glu	Tyr	Glu	Leu	Ser	Glu	Glu	Gly	Asp	Glu	Pro	Gln	Tyr	Leu	Asp	Leu	755	760	765	

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Leu	Ile	Leu	Ser	Thr	Ser	Gln	Thr	Thr	Ala	Pro	Asp	Ala	Pro	Pro	Asp
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Pro	Thr	Val	Asp	Gln	Val	Asp	Asp	Thr	Ser	Ile	Val	Val	Arg	Trp	Ser
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Val	Glu	Gly	Ser	Ser	Thr	Glu	Leu	Asn	Leu	Pro	Glu	Thr	Ala	Asn	Ser
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Val	Thr	Leu	Ser	Asp	Leu	Gln	Pro	Gly	Val	Gln	Tyr	Asn	Ile	Thr	Ile
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Tyr	Ala	Val	Glu	Glu	Asn	Gln	Glu	Ser	Thr	Pro	Val	Val	Ile	Gln	Gln
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Phe	Ala	Glu	Val	Thr	Gly	Leu	Ser	Pro	Gly	Val	Thr	Tyr	Tyr	Phe	Lys
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Gln	Thr	Thr	Lys	Leu	Asp	Ala	Pro	Thr	Asn	Leu	Gln	Phe	Val	Asn	Glu
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Ser Ser Ile Pro Pro Tyr Asn Thr Glu Val Thr Glu Thr Thr Ile Val
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Ile Thr Trp Thr Pro Ala Pro Arg Ile Gly Phe Lys Leu Gly Val Arg
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Pro Ser Gln Gly Gly Glu Ala Pro Arg Glu Val Thr Ser Asp Ser Gly
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Ser Ile Val Val Ser Gly Leu Thr Pro Gly Val Glu Tyr Val Tyr Thr
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Ile Gln Val Leu Arg Asp Gly Gln Glu Arg Asp Ala Pro Ile Val Asn
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Lys Val Val Thr Pro Leu Ser Pro Pro Thr Asn Leu His Leu Glu Ala
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Asn Pro Asp Thr Gly Val Leu Thr Val Ser Trp Glu Arg Ser Thr Thr
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Pro Asp Ile Thr Gly Tyr Arg Ile Thr Thr Thr Pro Thr Asn Gly Gln
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Gln Gly Asn Ser Leu Glu Glu Val Val His Ala Asp Gln Ser Ser Cys
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Thr Phe Asp Asn Leu Ser Pro Gly Leu Glu Tyr Asn Val Ser Val Tyr
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Pro Ala Val Pro Pro Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro
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Asp Thr Met Arg Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr
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Asn Phe Leu Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala
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Glu Leu Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu
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Leu Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln
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His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp Ser
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Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe Thr Val
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His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg Ile Arg His
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His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp Arg Val Pro His
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Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr Pro Gly Thr Glu Tyr
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Val Val Ser Ile Val Ala Leu Asn Gly Arg Glu Glu Ser Pro Leu Leu
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Ile Gly Gln Gln Ser Thr Val Ser Asp Val Pro Arg Asp Leu Glu Val
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Val Ala Ala Thr Pro Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala
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Val Thr Val Arg Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn
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Ser Pro Val Gln Glu Phe Thr Val Pro Gly Ser Lys Ser Thr Ala Thr
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Ile Ser Gly Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala
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Val Thr Gly Arg Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile
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Asn Tyr Arg Thr Glu Ile Asp Lys Pro Ser Gln Met Gln Val Thr Asp
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Val Gln Asp Asn Ser Ile Ser Val Lys Trp Leu Pro Ser Ser Ser Pro
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Val Thr Gly Tyr Arg Val Thr Thr Thr Pro Lys Asn Gly Pro Gly Pro
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Thr Lys Thr Lys Thr Ala Gly Pro Asp Gln Thr Glu Met Thr Ile Glu
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Gly Leu Gln Pro Thr Val Glu Tyr Val Val Ser Val Tyr Ala Gln Asn
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Pro Ser Gly Glu Ser Gln Pro Leu Val Gln Thr Ala Val Thr Asn Ile
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Asp Arg Pro Lys Gly Leu Ala Phe Thr Asp Val Asp Val Asp Ser Ile
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Lys Ile Ala Trp Glu Ser Pro Gln Gly Gln Val Ser Arg Tyr Arg Val
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Thr Tyr Ser Ser Pro Glu Asp Gly Ile His Glu Leu Phe Pro Ala Pro
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Asp Gly Glu Glu Asp Thr Ala Glu Leu Gln Gly Leu Arg Pro Gly Ser
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 Glu Tyr Thr Val Ser Val Val Ala Leu His Asp Asp Met Glu Ser Gln
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 Pro Leu Ile Gly Thr Gln Ser Thr Ala Ile Pro Ala Pro Thr Asp Leu
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 Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp Thr Pro
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 Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr Pro Lys Glu
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 Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Ser
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 Val Val Val Ser Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser Val
 1780 1785 1790
 Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly Val Val
 1795 1800 1805
 Thr Thr Leu Glu Asn Val Ser Pro Pro Arg Arg Ala Arg Val Thr Asp
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 Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr Lys Thr Glu Thr
 1825 1830 1835 1840
 Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala Asn Gly Gln Thr Pro
 1845 1850 1855
 Ile Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly
 1860 1865 1870
 Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp
 1875 1880 1885
 Asn Ala Arg Ser Ser Pro Val Val Ile Asp Ala Ser Thr Ala Ile Asp
 1890 1895 1900
 Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu
 1905 1910 1915 1920
 Val Ser Trp Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys
 1925 1930 1935
 Tyr Glu Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg
 1940 1945 1950
 Pro Gly Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr Glu
 1955 1960 1965
 Tyr Thr Ile Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser Glu Pro
 1970 1975 1980

Leu Ile Gly Arg Lys Lys Thr Asp Glu Leu Pro Gln Leu Val Thr Leu
 1985 1990 1995 2000
 Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp Val Pro Ser Thr
 2005 2010 2015
 Val Gln Lys Thr Pro Phe Val Thr His Pro Gly Tyr Asp Thr Gly Asn
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 Thr Ala Thr Pro Ile Arg His Arg Pro Arg Pro Tyr Pro Pro Asn Val
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 2100 2105 2110
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 Thr Ser Glu Tyr Ile Ile Ser Cys His Pro Val Gly Thr Asp Glu Glu
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 Pro Leu Gln Phe Arg Val Pro Gly Thr Ser Thr Ser Ala Thr Leu Thr
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 Gly Leu Thr Arg Gly Ala Thr Tyr Asn Ile Ile Val Glu Ala Leu Lys
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 Asp Gln Gln Arg His Lys Val Arg Glu Glu Val Val Thr Val Gly Asn
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 Ser Val Asn Glu Gly Leu Asn Gln Pro Thr Asp Asp Ser Cys Phe Asp
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 Pro Tyr Thr Val Ser His Tyr Ala Val Gly Asp Glu Trp Glu Arg Met
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 Gly His Phe Arg Cys Asp Ser Ser Arg Trp Cys His Asp Asn Gly Val
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 Asn Tyr Lys Ile Gly Glu Lys Trp Asp Arg Gln Gly Glu Asn Gly Gln
 2260 2265 2270
 Met Met Ser Cys Thr Cys Leu Gly Asn Gly Lys Gly Glu Phe Lys Cys
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Asp Pro His Glu Ala Thr Cys Tyr Asp Asp Gly Lys Thr Tyr His Val
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Gly Glu Gln Trp Gln Lys Glu Tyr Leu Gly Ala Ile Cys Ser Cys Thr
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Cys Phe Gly Gly Gln Arg Gly Trp Arg Cys Asp Asn Cys Arg Arg Pro
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Gly Gly Glu Pro Ser Pro Glu Gly Thr Thr Gly Gln Ser Tyr Asn Gln
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Tyr Ser Gln Arg Tyr His Gln Arg Thr Asn Thr Asn Val Asn Cys Pro
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Arg Glu
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Thr Pro Glu Arg Leu Ala Ala Cys Gly Pro Pro Pro Val Ala Pro Pro
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Ala Ala Val Ala Ala Val Ala Gly Gly Ala Arg Met Pro Cys Ala Glu
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Leu Val Arg Glu Pro Gly Cys Gly Cys Cys Ser Val Cys Ala Arg Leu
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Glu Gly Glu Ala Cys Gly Val Tyr Thr Pro Arg Cys Gly Gln Gly Leu
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Arg Cys Tyr Pro His Pro Gly Ser Glu Leu Pro Leu Gln Ala Leu Val
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Met Gly Glu Gly Thr Cys Glu Lys Arg Arg Asp Ala Glu Tyr Gly Ala
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Ser Pro Glu Gln Val Ala Asp Asn Gly Asp Asp His Ser Glu Gly Gly
 145 150 155 160

Leu Val Glu Asn His Val Asp Ser Thr Met Asn Met Leu Gly Gly Gly
 165 170 175
 Gly Ser Ala Gly Arg Lys Pro Leu Lys Ser Gly Met Lys Glu Leu Ala
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 Val Phe Arg Glu Lys Val Thr Glu Gln His Arg Gln Met Gly Lys Gly
 195 200 205
 Gly Lys His His Leu Gly Leu Glu Glu Pro Lys Lys Leu Arg Pro Pro
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 Pro Ala Arg Thr Pro Cys Gln Gln Glu Leu Asp Gln Val Leu Glu Arg
 225 230 235 240
 Ile Ser Thr Met Arg Leu Pro Asp Glu Arg Gly Pro Leu Glu His Leu
 245 250 255
 Tyr Ser Leu His Ile Pro Asn Cys Asp Lys His Gly Leu Tyr Asn Leu
 260 265 270
 Lys Gln Cys Lys Met Ser Leu Asn Gly Gln Arg Gly Glu Cys Trp Cys
 275 280 285
 Val Asn Pro Asn Thr Gly Lys Leu Ile Gln Gly Ala Pro Thr Ile Arg
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 35 40 45
 Ala Leu Leu Arg Cys Glu Val Glu Ala Pro Gly Pro Val His Val Tyr
 50 55 60
 Trp Leu Leu Asp Gly Ala Pro Val Gln Asp Thr Glu Arg Arg Phe Ala
 65 70 75 80
 Gln Gly Ser Ser Leu Ser Phe Ala Ala Val Asp Pro Leu Gln Asp Ser
 85 90 95

Gly	Thr	Phe	Gln	Cys	Val	Ala	Arg	Asp	Asp	Val	Thr	Gly	Glu	Glu	Ala
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Arg	Ser	Ala	Asn	Ala	Ser	Phe	Asn	Ile	Lys	Trp	Ile	Glu	Ala	Gly	Pro
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Val	Val	Leu	Lys	His	Pro	Ala	Ser	Glu	Ala	Glu	Ile	Gln	Pro	Gln	Thr
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Gln	Trp	Phe	Arg	Asp	Gly	Thr	Pro	Leu	Ser	Asp	Gly	Gln	Ser	Asn	His
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Thr	Val	Ser	Ser	Lys	Glu	Arg	Asn	Leu	Thr	Leu	Arg	Pro	Ala	Gly	Pro
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Glu	His	Ser	Gly	Leu	Tyr	Ser	Cys	Cys	Ala	His	Ser	Ala	Phe	Ser	Gln
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Glu	Ala	Met	Phe	His	Cys	Gln	Phe	Ser	Ala	Gln	Pro	Pro	Pro	Ser	Leu
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Ser	Glu	Glu	Arg	Val	Thr	Cys	Leu	Pro	Pro	Lys	Gly	Leu	Pro	Glu	Pro
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Ser	Val	Trp	Trp	Glu	His	Ala	Gly	Val	Arg	Leu	Pro	Thr	His	Gly	Arg
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Val	Tyr	Gln	Lys	Gly	His	Glu	Leu	Val	Leu	Ala	Asn	Ile	Ala	Glu	Ser
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Asp	Ala	Gly	Val	Tyr	Thr	Cys	His	Ala	Ala	Asn	Leu	Ala	Gly	Gln	Arg
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Arg	Gln	Asp	Val	Asn	Ile	Thr	Val	Ala	Thr	Val	Pro	Ser	Trp	Leu	Lys	405	410	415	
Lys	Pro	Gln	Asp	Ser	Gln	Leu	Glu	Glu	Gly	Lys	Pro	Gly	Tyr	Leu	Asp	420	425	430	
Cys	Leu	Thr	Gln	Ala	Thr	Pro	Lys	Pro	Thr	Val	Val	Trp	Tyr	Arg	Asn	435	440	445	
Gln	Met	Leu	Ile	Ser	Glu	Asp	Ser	Arg	Phe	Glu	Val	Phe	Lys	Asn	Gly	450	455	460	
Thr	Leu	Arg	Ile	Asn	Ser	Val	Glu	Val	Tyr	Asp	Gly	Thr	Trp	Tyr	Arg	465	470	475	480
Cys	Met	Ser	Ser	Thr	Pro	Ala	Gly	Ser	Ile	Glu	Ala	Gln	Ala	Val	Leu	485	490	495	
Gln	Val	Leu	Glu	Lys	Leu	Lys	Phe	Thr	Pro	Pro	Pro	Gln	Pro	Gln	Gln	500	505	510	
Cys	Met	Gly	Phe	Asp	Lys	Glu	Ala	Thr	Val	Pro	Cys	Ser	Ala	Thr	Gly	515	520	525	
Arg	Glu	Lys	Pro	Thr	Ile	Lys	Trp	Glu	Arg	Ala	Asp	Gly	Ser	Ser	Leu	530	535	540	
Pro	Glu	Trp	Val	Thr	Asp	Asn	Ala	Gly	Thr	Leu	His	Phe	Ala	Arg	Val	545	550	555	560
Thr	Arg	Asp	Asp	Ala	Gly	Asn	Tyr	Thr	Cys	Ile	Ala	Ser	Asn	Gly	Pro	565	570	575	
Gln	Gly	Gln	Ile	Arg	Ala	His	Val	Gln	Leu	Thr	Val	Ala	Val	Phe	Ile	580	585	590	
Thr	Phe	Lys	Val	Glu	Pro	Glu	Arg	Thr	Thr	Val	Tyr	Gln	Gly	His	Thr	595	600	605	
Ala	Leu	Leu	Gln	Cys	Glu	Ala	Gln	Gly	Asp	Pro	Lys	Pro	Leu	Ile	Gln	610	615	620	
Trp	Lys	Gly	Lys	Asp	Arg	Ile	Leu	Asp	Pro	Thr	Lys	Leu	Gly	Pro	Arg	625	630	635	640
Met	His	Ile	Phe	Gln	Asn	Gly	Ser	Leu	Val	Ile	His	Asp	Val	Ala	Pro	645	650	655	
Glu	Asp	Ser	Gly	Arg	Tyr	Thr	Cys	Ile	Ala	Gly	Asn	Ser	Cys	Asn	Ile	660	665	670	
Lys	His	Thr	Glu	Ala	Pro	Leu	Tyr	Val	Val	Asp	Lys	Pro	Val	Pro	Glu	675	680	685	
Glu	Ser	Glu	Gly	Pro	Gly	Ser	Pro	Pro	Pro	Tyr	Lys	Met	Ile	Gln	Thr	690	695	700	

Ile	Gly	Leu	Ser	Val	Gly	Ala	Ala	Val	Ala	Tyr	Ile	Ile	Ala	Val	Leu	705	710	715	720
Gly	Leu	Met	Phe	Tyr	Cys	Lys	Lys	Arg	Cys	Lys	Ala	Lys	Arg	Leu	Gln	725	730	735	
Lys	Gln	Pro	Glu	Gly	Glu	Glu	Pro	Glu	Met	Glu	Cys	Leu	Asn	Gly	Gly	740	745	750	
Pro	Leu	Gln	Asn	Gly	Gln	Pro	Ser	Ala	Glu	Ile	Gln	Glu	Glu	Val	Ala	755	760	765	
Leu	Thr	Ser	Leu	Gly	Ser	Gly	Pro	Ala	Ala	Thr	Asn	Lys	Arg	His	Ser	770	775	780	
Thr	Ser	Asp	Lys	Met	His	Phe	Pro	Arg	Ser	Ser	Leu	Gln	Pro	Ile	Thr	785	790	795	800
Thr	Leu	Gly	Lys	Ser	Glu	Phe	Gly	Glu	Val	Phe	Leu	Ala	Lys	Ala	Gln	805	810	815	
Gly	Leu	Glu	Glu	Gly	Val	Ala	Glu	Thr	Leu	Val	Leu	Val	Lys	Ser	Leu	820	825	830	
Gln	Ser	Lys	Asp	Glu	Gln	Gln	Gln	Leu	Asp	Phe	Arg	Arg	Glu	Leu	Glu	835	840	845	
Met	Phe	Gly	Lys	Leu	Asn	His	Ala	Asn	Val	Val	Arg	Leu	Leu	Gly	Leu	850	855	860	
Cys	Arg	Glu	Ala	Glu	Pro	His	Tyr	Met	Val	Leu	Glu	Tyr	Val	Asp	Leu	865	870	875	880
Glu	Asp	Leu	Lys	Gln	Phe	Leu	Arg	Ile	Ser	Lys	Ser	Lys	Asp	Glu	Lys	885	890	895	
Leu	Lys	Ser	Gln	Pro	Leu	Ser	Thr	Lys	Gln	Lys	Val	Ala	Leu	Cys	Thr	900	905	910	
Gln	Val	Ala	Leu	Gly	Met	Glu	His	Leu	Ser	Asn	Asn	Arg	Phe	Val	His	915	920	925	
Lys	Asp	Leu	Ala	Ala	Arg	Asn	Cys	Leu	Val	Ser	Ala	Gln	Arg	Gln	Val	930	935	940	
Lys	Val	Ser	Ala	Leu	Gly	Leu	Ser	Lys	Asp	Val	Tyr	Asn	Ser	Glu	Tyr	945	950	955	960
Tyr	His	Phe	Arg	Gln	Ala	Trp	Val	Ala	Leu	Arg	Trp	Met	Ser	Pro	Glu	965	970	975	
Ala	Ile	Leu	Glu	Gly	Asp	Phe	Ser	Thr	Lys	Ser	Asp	Val	Trp	Ala	Ser	980	985	990	
Gly	Val	Leu	Met	Trp	Glu	Val	Phe	Thr	His	Gly	Glu	Met	Pro	His	Gly	995	1000	1005	

Gly Gln Ala Asp Asp Glu Val Leu Ala Asp Leu Gln Ala Gly Lys Ala
 1010 1015 1020

Arg Leu Pro Gln Pro Glu Gly Cys Pro Ser Lys Leu Tyr Arg Leu Met
 1025 1030 1035 1040

Gln Arg Cys Trp Ala Leu Ser Pro Lys Asp Arg Pro Ser Phe Ser Glu
 1045 1050 1055

Ile Ala Ser Ala Leu Gly Asp Ser Thr Val Asp Ser Lys Pro
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<211> 1088

<212> PRT

<213> Homo sapiens

<400> 4

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Gly Leu Ser Leu Ile Leu Cys Gln Leu Ser Leu Pro Ser Ile Leu Pro
 20 25 30

Asn Glu Asn Glu Lys Val Val Gln Leu Asn Ser Ser Phe Ser Leu Arg
 35 40 45

Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu
 50 55 60

Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu
 65 70 75 80

Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly
 85 90 95

Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu
 100 105 110

Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe
 115 120 125

Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp
 130 135 140

Ser Ala Ile Ile Pro Cys Arg Thr Thr Asp Pro Glu Thr Pro Val Thr
 145 150 155 160

Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln
 165 170 175

Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr
 180 185 190

Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu
 195 200 205

Lys 210	Ala	Thr	Ser	Glu	Leu	Asp 215	Leu	Glu	Met	Glu	Ala 220	Leu	Lys	Thr	Val
Tyr 225	Lys	Ser	Gly	Glu	Thr 230	Ile	Val	Val	Thr	Cys 235	Ala	Val	Phe	Asn	Asn 240
Glu	Val	Val	Asp	Leu 245	Gln	Trp	Thr	Tyr	Pro 250	Gly	Glu	Val	Lys	Gly 255	Lys
Gly	Ile	Thr	Met 260	Leu	Glu	Glu	Ile	Lys 265	Val	Pro	Ser	Ile	Lys 270	Leu	Val
Tyr	Thr	Leu 275	Thr	Val	Pro	Glu	Ala 280	Thr	Val	Lys	Asp	Ser 285	Gly	Asp	Tyr
Glu	Cys 290	Ala	Ala	Arg	Gln	Ala 295	Thr	Arg	Glu	Val	Lys 300	Glu	Met	Lys	Lys
Val 305	Thr	Ile	Ser	Val	His 310	Glu	Lys	Gly	Phe	Ile 315	Glu	Ile	Lys	Pro	Thr 320
Phe	Ser	Gln	Leu	Glu 325	Ala	Val	Asn	Leu	His 330	Glu	Val	Lys	His	Phe 335	Val
Val	Glu	Val	Arg 340	Ala	Tyr	Pro	Pro	Pro 345	Arg	Ile	Ser	Trp	Leu 350	Lys	Asn
Asn	Leu	Thr 355	Leu	Ile	Glu	Asn	Leu 360	Thr	Glu	Ile	Thr 365	Thr	Asp	Val	Glu
Lys 370	Ile	Gln	Glu	Ile	Arg	Tyr 375	Arg	Ser	Lys	Leu	Lys 380	Leu	Ile	Arg	Ala
Lys 385	Glu	Glu	Asp	Ser	Gly 390	His	Tyr	Thr	Ile	Val 395	Ala	Gln	Asn	Glu	Asp 400
Ala	Val	Lys	Ser	Tyr 405	Thr	Phe	Glu	Leu	Leu 410	Thr	Gln	Val	Pro	Ser	Ser
Ile	Leu	Asp	Leu 420	Val	Asp	Asp	His	His 425	Gly	Ser	Thr	Gly	Gly 430	Gln	Thr
Val	Arg	Cys 435	Thr	Ala	Glu	Gly	Thr 440	Pro	Leu	Pro	Asp	Ile 445	Glu	Trp	Met
Ile 450	Cys	Lys	Asp	Ile	Lys	Lys 455	Cys	Asn	Asn	Glu	Thr 460	Ser	Trp	Thr	Ile
Leu 465	Ala	Asn	Asn	Val	Ser 470	Asn	Ile	Ile	Thr	Glu 475	Ile	His	Ser	Arg	Asp 480
Arg	Ser	Thr	Val 485	Glu	Gly	Arg	Val	Thr	Phe 490	Ala	Lys	Val	Glu	Glu 495	Thr
Ile	Ala	Val	Arg 500	Cys	Leu	Ala	Lys	Asn 505	Leu	Leu	Gly	Ala	Glu 510	Asn	Arg

Glu	Leu	Lys	Leu	Val	Ala	Pro	Thr	Leu	Arg	Ser	Glu	Leu	Thr	Val	Ala
		515					520					525			
Ala	Ala	Val	Leu	Val	Leu	Leu	Val	Ile	Val	Ile	Ile	Ser	Leu	Ile	Val
	530					535					540				
Leu	Val	Val	Ile	Trp	Lys	Gln	Lys	Pro	Arg	Tyr	Glu	Ile	Arg	Trp	Arg
545					550					555					560
Val	Ile	Glu	Ser	Ile	Ser	Pro	Asp	Gly	His	Glu	Tyr	Ile	Tyr	Val	Asp
				565					570					575	
Pro	Met	Gln	Leu	Pro	Tyr	Asp	Ser	Arg	Trp	Glu	Phe	Pro	Arg	Asp	Gly
			580					585					590		
Leu	Val	Leu	Gly	Arg	Val	Leu	Gly	Ser	Gly	Ala	Phe	Gly	Lys	Val	Val
		595					600					605			
Glu	Gly	Thr	Ala	Tyr	Gly	Leu	Ser	Arg	Ser	Gln	Pro	Val	Met	Lys	Val
	610					615					620				
Ala	Val	Lys	Met	Leu	Lys	Pro	Thr	Ala	Arg	Ser	Ser	Glu	Lys	Gln	Ala
625					630					635					640
Leu	Met	Ser	Glu	Leu	Lys	Ile	Met	Thr	His	Leu	Gly	Pro	His	Leu	Asn
				645					650					655	
Ile	Val	Asn	Leu	Leu	Gly	Ala	Cys	Thr	Lys	Ser	Gly	Pro	Ile	Tyr	Ile
			660					665					670		
Ile	Thr	Glu	Tyr	Cys	Phe	Tyr	Gly	Asp	Leu	Val	Asn	Tyr	Leu	His	Lys
		675					680					685			
Asn	Arg	Asp	Ser	Phe	Leu	Ser	His	His	Pro	Glu	Lys	Pro	Lys	Lys	Glu
	690					695					700				
Leu	Asp	Ile	Phe	Gly	Leu	Asn	Pro	Ala	Asp	Glu	Ser	Thr	Arg	Ser	Tyr
705					710					715					720
Val	Ile	Leu	Ser	Phe	Glu	Asn	Asn	Gly	Asp	Tyr	Met	Asp	Met	Lys	Gln
				725					730					735	
Ala	Asp	Thr	Thr	Gln	Tyr	Val	Pro	Met	Leu	Glu	Arg	Lys	Glu	Val	Ser
			740					745					750		
Lys	Tyr	Ser	Asp	Ile	Gln	Arg	Ser	Leu	Tyr	Asp	Arg	Pro	Ala	Ser	Tyr
		755					760					765			
Lys	Lys	Lys	Ser	Met	Leu	Asp	Ser	Glu	Val	Lys	Asn	Leu	Leu	Ser	Asp
	770					775					780				
Asp	Asn	Ser	Glu	Gly	Leu	Thr	Leu	Leu	Asp	Leu	Leu	Ser	Phe	Thr	Tyr
785					790					795					800
Gln	Val	Ala	Arg	Gly	Met	Glu	Phe	Leu	Ala	Ser	Lys	Asn	Cys	Val	His
				805					810					815	

Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu	Leu	Ala	Gln	Gly	Lys	Ile	Val
			820					825					830		
Lys	Ile	Cys	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Ile	Met	His	Asp	Ser	Asn
		835					840					845			
Tyr	Val	Ser	Lys	Gly	Ser	Thr	Phe	Leu	Pro	Val	Lys	Trp	Met	Ala	Pro
	850					855					860				
Glu	Ser	Ile	Phe	Asp	Asn	Leu	Tyr	Thr	Thr	Leu	Ser	Asp	Val	Trp	Ser
865					870					875					880
Tyr	Gly	Ile	Leu	Leu	Trp	Glu	Ile	Phe	Ser	Leu	Gly	Gly	Thr	Pro	Tyr
				885					890					895	
Pro	Gly	Met	Met	Val	Asp	Ser	Thr	Phe	Tyr	Asn	Lys	Ile	Lys	Ser	Gly
			900					905					910		
Tyr	Arg	Met	Ala	Lys	Pro	Asp	His	Ala	Thr	Ser	Glu	Val	Tyr	Glu	Ile
		915					920					925			
Met	Val	Lys	Cys	Trp	Asn	Ser	Glu	Pro	Glu	Lys	Arg	Pro	Ser	Phe	Tyr
	930					935					940				
His	Leu	Ser	Glu	Ile	Val	Glu	Asn	Leu	Leu	Pro	Gly	Gln	Tyr	Lys	Lys
945					950					955					960
Ser	Tyr	Glu	Lys	Ile	His	Leu	Asp	Phe	Leu	Lys	Ser	Asp	His	Pro	Ala
				965					970					975	
Val	Ala	Arg	Met	Val	Asp	Ser	Asp	Asn	Ala	Tyr	Ile	Gly	Val	Thr	Tyr
			980					985					990		
Lys	Asn	Glu	Glu	Asp	Lys	Leu	Lys	Asp	Trp	Glu	Gly	Gly	Leu	Asp	Glu
		995					1000					1005			
Gln	Arg	Leu	Ser	Ala	Asp	Ser	Gly	Tyr	Ile	Ile	Pro	Leu	Pro	Asp	Ile
	1010					1015					1020				
Asp	Pro	Val	Pro	Glu	Glu	Glu	Asp	Leu	Gly	Lys	Arg	Asn	Arg	His	Ser
1025				1030					1035					1040	
Ser	Gln	Thr	Ser	Glu	Glu	Ser	Ala	Ile	Glu	Thr	Gly	Ser	Ser	Ser	Ser
				1045					1050					1055	
Thr	Phe	Ile	Lys	Arg	Glu	Asp	Glu	Thr	Ile	Glu	Asp	Ile	Asp	Met	Met
		1060					1065					1070			
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<400> 5

Gly	Glu	Val	Gly	Ala	Asp	Gly	Ile	Pro	Gly	Phe	Pro	Gly	Leu	Pro	Gly	1	5	10	15
Arg	Glu	Gly	Ile	Ala	Gly	Pro	Gln	Gly	Pro	Lys	Gly	Asp	Arg	Gly	Ser	20	25	30	
Arg	Gly	Glu	Lys	Gly	Asp	Pro	Gly	Lys	Asp	Gly	Leu	Gly	Gln	Pro	Gly	35	40	45	
Leu	Pro	Gly	Pro	Arg	Gly	Pro	Pro	Gly	Pro	Val	Val	Tyr	Val	Ser	Glu	50	55	60	
Gln	Asp	Gly	Ser	Val	Leu	Ser	Val	Pro	Gly	Pro	Glu	Gly	Arg	Arg	Gly	65	70	75	80
Phe	Ala	Gly	Phe	Pro	Gly	Pro	Ala	Gly	Pro	Lys	Gly	Asn	Leu	Gly	Ser	85	90	95	
Lys	Gly	Glu	Leu	Gly	Ser	Pro	Gly	Pro	Lys	Gly	Glu	Lys	Gly	Glu	Pro	100	105	110	
Gly	Ser	Ile	Phe	Ser	Pro	Asp	Gly	Gly	Ala	Leu	Gly	Pro	Ala	Gln	Lys	115	120	125	
Gly	Ala	Lys	Gly	Glu	Pro	Gly	Phe	Arg	Gly	Pro	Pro	Gly	Leu	Tyr	Gly	130	135	140	
Arg	Pro	Gly	Tyr	Lys	Gly	Glu	Ile	Gly	Phe	Pro	Gly	Arg	Pro	Gly	Arg	145	150	155	160
Pro	Gly	Met	Asn	Gly	Leu	Lys	Gly	Glu	Lys	Gly	Glu	Pro	Gly	Asp	Ala	165	170	175	
Ser	Leu	Gly	Phe	Gly	Met	Arg	Gly	Met	Pro	Gly	Pro	Pro	Gly	Pro	Pro	180	185	190	
Gly	Pro	Pro	Gly	Pro	Pro	Gly	Thr	Pro	Val	Tyr	Asp	Ser	Asn	Val	Phe	195	200	205	
Ala	Glu	Ser	Ser	Arg	Pro	Gly	Pro	Pro	Gly	Leu	Pro	Gly	Asn	Gln	Gly	210	215	220	
Pro	Pro	Gly	Pro	Lys	Gly	Pro	Lys	Gly	Glu	Val	Gly	Pro	Pro	Gly	Pro	225	230	235	240
Pro	Gly	Gln	Phe	Pro	Phe	Asp	Phe	Leu	Gln	Lys	Glu	Ala	Glu	Met	Lys	245	250	255	
Gly	Glu	Lys	Gly	Asp	Arg	Gly	Asp	Ala	Gly	Gln	Lys	Gly	Glu	Arg	Gly	260	265	270	
Glu	Pro	Gly	Gly	Gly	Gly	Phe	Phe	Gly	Ser	Ser	Leu	Pro	Gly	Ala	Pro	275	280	285	
Gly	Ala	Pro	Gly	Pro	Arg	Gly	Tyr	Pro	Gly	Ile	Pro	Gly	Pro	Lys	Gly	290	295	300	

Glu 305	Ser	Ile	Arg	Gly 310	Gln	Pro	Gly	Pro	Pro	Gly 315	Pro	Gln	Gly	Pro	Pro 320
Gly	Ile	Gly	Tyr	Glu 325	Gly	Arg	Gln	Gly	Pro 330	Pro	Gly	Pro	Pro	Gly 335	Pro
Pro	Gly	Pro	Pro	Ser 340	Phe	Pro	Gly	Pro 345	His	Arg	Gln	Thr	Ile 350	Ser	Val
Pro	Gly	Pro	Pro	Gly 355	Pro	Pro	Gly 360	Pro	Pro	Gly	Pro	Pro	Gly 365	Thr	Met
Gly	Ala	Ser	Ser	Gly	Gln	Val	Arg	Leu	Trp	Ala	Thr 380	Arg	Gln	Ala	Met
Leu 385	Gly	Gln	Val	His	Glu 390	Val	Pro	Glu	Gly	Trp 395	Leu	Ile	Phe	Val	Ala 400
Glu	Gln	Glu	Glu	Leu 405	Tyr	Val	Arg	Val	Gln	Asn	Gly	Phe	Arg	Lys 415	Val
Gln	Leu	Glu	Ala 420	Arg	Thr	Pro	Leu	Pro 425	Arg	Gly	Thr	Asp	Asn 430	Glu	Val
Ala	Ala	Leu 435	Gln	Pro	Pro	Val	Val	Gln	Leu	His	Asp	Ser 445	Asn	Pro	Tyr
Pro	Arg 450	Arg	Glu	His	Pro	His 455	Pro	Thr	Ala	Arg	Pro 460	Trp	Arg	Ala	Asp
Asp 465	Ile	Leu	Ala	Ser	Pro	Pro	Gly	Leu	Pro	Glu 475	Pro	Gln	Pro	Tyr	Pro 480
Gly	Gly	Pro	His	His 485	Ser	Ser	Tyr	Val	His 490	Cys	Gly	Pro	Ala	Arg 495	Pro
Thr	Ser	Pro	Pro	Ala	His	Ser	His	Arg 505	Asp	Phe	Gln	Pro	Val 510	Leu	His
Leu	Val 515	Ala	Leu	Asn	Ser	Pro	Leu	Ser 520	Gly	Gly	Met	Arg 525	Gly	Ile	Arg
Gly 530	Ala	Asp	Phe	Gln	Cys	Phe	Gln	Gln	Ala	Arg	Ala 540	Val	Gly	Leu	Ala
Gly 545	Thr	Phe	Arg	Ala	Phe	Leu	Ser	Ser	Arg	Leu 555	Gln	Asp	Leu	Tyr	Ser 560
Ile	Val	Arg	Arg	Ala 565	Asp	Arg	Ala	Ala	Val 570	Pro	Ile	Val	Asn	Leu 575	Lys
Asp	Glu	Leu	Leu	Phe	Pro	Ser	Trp	Glu 585	Ala	Leu	Phe	Ser	Gly 590	Ser	Glu
Gly	Pro	Leu	Lys	Pro	Gly	Ala	Arg 600	Ile	Phe	Ser	Phe	Asp 605	Gly	Lys	Asp

Val Leu Arg His Pro Thr Trp Pro Gln Lys Ser Val Trp His Gly Ser
610 615 620

Asp Pro Asn Gly Arg Arg Leu Thr Glu Ser Tyr Cys Glu Thr Trp Arg
625 630 635 640

Thr Glu Ala Pro Ser Ala Thr Gly Gln Ala Ser Ser Leu Leu Gly Gly
645 650 655

Arg Leu Leu Gly Gln Ser Ala Ala Ser Cys His His Ala Tyr Ile Val
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Leu Cys Ile Glu Asn Ser Phe Met Thr Ala Ser Lys
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<213> Homo sapiens

<400> 6

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Ala Gly Gly Ala Gly Gly Pro Gly Phe Arg Pro Leu Ala Pro Arg Pro
35 40 45

Trp Arg Trp Leu Leu Leu Leu Ala Leu Pro Ala Ala Cys Ser Ala Pro
50 55 60

Pro Pro Arg Pro Val Tyr Thr Asn His Trp Ala Val Gln Val Leu Gly
65 70 75 80

Gly Pro Ala Glu Ala Asp Arg Val Ala Ala Ala His Gly Tyr Leu Asn
85 90 95

Leu Gly Gln Ile Gly Asn Leu Glu Asp Tyr Tyr His Phe Tyr His Ser
100 105 110

Lys Thr Phe Lys Arg Ser Thr Leu Ser Ser Arg Gly Pro His Thr Phe
115 120 125

Leu Arg Met Asp Pro Gln Val Lys Trp Leu Gln Gln Gln Glu Val Lys
130 135 140

Arg Arg Val Lys Arg Gln Val Arg Ser Asp Pro Gln Ala Leu Tyr Phe
145 150 155 160

Asn Asp Pro Ile Trp Ser Asn Met Trp Tyr Leu His Cys Gly Asp Lys
165 170 175

Asn Ser Arg Cys Arg Ser Glu Met Asn Val Gln Ala Ala Trp Lys Arg
180 185 190

Gly	Tyr	Thr	Gly	Lys	Asn	Val	Val	Val	Thr	Ile	Leu	Asp	Asp	Gly	Ile	195	200	205
Glu	Arg	Asn	His	Pro	Asp	Leu	Ala	Pro	Asn	Tyr	Asp	Ser	Tyr	Ala	Ser	210	215	220
Tyr	Asp	Val	Asn	Gly	Asn	Asp	Tyr	Asp	Pro	Ser	Pro	Arg	Tyr	Asp	Ala	225	230	235
Ser	Asn	Glu	Asn	Lys	His	Gly	Thr	Arg	Cys	Ala	Gly	Glu	Val	Ala	Ala	245	250	255
Ser	Ala	Asn	Asn	Ser	Tyr	Cys	Ile	Val	Gly	Ile	Ala	Tyr	Asn	Ala	Lys	260	265	270
Ile	Gly	Gly	Ile	Arg	Met	Leu	Asp	Gly	Asp	Val	Thr	Asp	Val	Val	Glu	275	280	285
Ala	Lys	Ser	Leu	Gly	Ile	Arg	Pro	Asn	Tyr	Ile	Asp	Ile	Tyr	Ser	Ala	290	295	300
Ser	Trp	Gly	Pro	Asp	Asp	Asp	Gly	Lys	Thr	Val	Asp	Gly	Pro	Gly	Arg	305	310	315
Leu	Ala	Lys	Gln	Ala	Phe	Glu	Tyr	Gly	Ile	Lys	Lys	Gly	Arg	Gln	Gly	325	330	335
Leu	Gly	Ser	Ile	Phe	Val	Trp	Ala	Ser	Gly	Asn	Gly	Gly	Arg	Glu	Gly	340	345	350
Asp	Tyr	Cys	Ser	Cys	Asp	Gly	Tyr	Thr	Asn	Ser	Ile	Tyr	Thr	Ile	Ser	355	360	365
Val	Ser	Ser	Ala	Thr	Glu	Asn	Gly	Tyr	Lys	Pro	Trp	Tyr	Leu	Glu	Glu	370	375	380
Cys	Ala	Ser	Thr	Leu	Ala	Thr	Thr	Tyr	Ser	Ser	Gly	Ala	Phe	Tyr	Glu	385	390	395
Arg	Lys	Ile	Val	Thr	Thr	Asp	Leu	Arg	Gln	Arg	Cys	Thr	Asp	Gly	His	405	410	415
Thr	Gly	Thr	Ser	Val	Ser	Ala	Pro	Met	Val	Ala	Gly	Ile	Ile	Ala	Leu	420	425	430
Ala	Leu	Glu	Ala	Asn	Ser	Gln	Leu	Thr	Trp	Arg	Asp	Val	Gln	His	Leu	435	440	445
Leu	Val	Lys	Thr	Ser	Arg	Pro	Ala	His	Leu	Lys	Ala	Ser	Asp	Trp	Lys	450	455	460
Val	Asn	Gly	Ala	Gly	His	Lys	Val	Ser	His	Phe	Tyr	Gly	Phe	Gly	Leu	465	470	475
Val	Asp	Ala	Glu	Ala	Leu	Val	Val	Glu	Ala	Lys	Lys	Trp	Thr	Ala	Val	485	490	495

Pro	Ser	Gln	His	Met	Cys	Val	Ala	Ala	Ser	Asp	Lys	Arg	Pro	Arg	Ser			
			500					505					510					
Ile	Pro	Leu	Val	Gln	Val	Leu	Arg	Thr	Thr	Ala	Leu	Thr	Ser	Ala	Cys			
		515					520					525						
Ala	Glu	His	Ser	Asp	Gln	Arg	Val	Val	Tyr	Leu	Glu	His	Val	Val	Val			
	530					535					540							
Arg	Thr	Ser	Ile	Ser	His	Pro	Arg	Arg	Gly	Asp	Leu	Gln	Ile	Tyr	Leu			
545					550					555					560			
Val	Ser	Pro	Ser	Gly	Thr	Lys	Ser	Gln	Leu	Leu	Ala	Lys	Arg	Leu	Leu			
				565					570					575				
Asp	Leu	Ser	Asn	Glu	Gly	Phe	Thr	Asn	Trp	Glu	Phe	Met	Thr	Val	His			
			580					585					590					
Cys	Trp	Gly	Glu	Lys	Ala	Glu	Gly	Gln	Trp	Thr	Leu	Glu	Ile	Gln	Asp			
		595					600					605						
Leu	Pro	Ser	Gln	Val	Arg	Asn	Pro	Glu	Lys	Gln	Gly	Lys	Leu	Lys	Glu			
	610					615					620							
Trp	Ser	Leu	Ile	Leu	Tyr	Gly	Thr	Ala	Glu	His	Pro	Tyr	His	Thr	Phe			
625					630					635					640			
Ser	Ala	His	Gln	Ser	Arg	Ser	Arg	Met	Leu	Glu	Leu	Ser	Ala	Pro	Glu			
				645					650					655				
Leu	Glu	Pro	Pro	Lys	Ala	Ala	Leu	Ser	Pro	Ser	Gln	Val	Glu	Val	Pro			
			660					665					670					
Glu	Asp	Glu	Glu	Asp	Tyr	Thr	Ala	Gln	Ser	Thr	Pro	Gly	Ser	Ala	Asn			
	675						680					685						
Ile	Leu	Gln	Thr	Ser	Val	Cys	His	Pro	Glu	Cys	Gly	Asp	Lys	Gly	Cys			
	690					695					700							
Asp	Gly	Pro	Asn	Ala	Asp	Gln	Cys	Leu	Asn	Cys	Val	His	Phe	Ser	Leu			
705					710					715					720			
Gly	Ser	Val	Lys	Thr	Ser	Arg	Lys	Cys	Val	Ser	Val	Cys	Pro	Leu	Gly			
				725					730					735				
Tyr	Phe	Gly	Asp	Thr	Ala	Ala	Arg	Arg	Cys	Arg	Arg	Cys	His	Lys	Gly			
			740				745					750						
Cys	Glu	Thr	Cys	Ser	Ser	Arg	Ala	Ala	Thr	Gln	Cys	Leu	Ser	Cys	Arg			
		755					760				765							
Arg	Gly	Phe	Tyr	His	His	Gln	Glu	Met	Asn	Thr	Cys	Val	Thr	Leu	Cys			
	770					775					780							
Pro	Ala	Gly	Phe	Tyr	Ala	Asp	Glu	Ser	Gln	Lys	Asn	Cys	Leu	Lys	Cys			
785					790					795					800			

His Pro Ser Cys Lys Lys Cys Val Asp Glu Pro Glu Lys Cys Thr Val
 805 810 815
 Cys Lys Glu Gly Phe Ser Leu Ala Arg Gly Ser Cys Ile Pro Asp Cys
 820 825 830
 Glu Pro Gly Thr Tyr Phe Asp Ser Glu Leu Ile Arg Cys Gly Glu Cys
 835 840 845
 His His Thr Cys Gly Thr Cys Val Gly Pro Gly Arg Glu Glu Cys Ile
 850 855 860
 His Cys Ala Lys Asn Phe His Phe His Asp Trp Lys Cys Val Pro Ala
 865 870 875 880
 Cys Gly Glu Gly Phe Tyr Pro Glu Glu Met Pro Gly Leu Pro His Lys
 885 890 895
 Val Cys Arg Arg Cys Asp Glu Asn Cys Leu Ser Cys Ala Gly Ser Ser
 900 905 910
 Arg Asn Cys Ser Arg Cys Lys Thr Gly Phe Thr Gln Leu Gly Thr Ser
 915 920 925
 Cys Ile Thr Asn His Thr Cys Ser Asn Ala Asp Glu Thr Phe Cys Glu
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 Cys Cys Arg Thr Cys Leu Leu Ala Gly
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 Ala His Gln Gln Arg Gly Leu Phe Pro Ala Val Leu Asn Leu Ala Ser
 35 40 45
 Asn Ala Leu Ile Thr Thr Asn Ala Thr Cys Gly Glu Lys Gly Pro Glu
 50 55 60
 Met Tyr Cys Lys Leu Val Glu His Val Pro Gly Gln Pro Val Arg Asn
 65 70 75 80
 Pro Gln Cys Arg Ile Cys Asn Gln Asn Ser Ser Asn Pro Asn Gln Arg
 85 90 95

His	Pro	Ile	Thr	Asn	Ala	Ile	Asp	Gly	Lys	Asn	Thr	Trp	Trp	Gln	Ser
			100					105					110		
Pro	Ser	Ile	Lys	Asn	Gly	Ile	Glu	Tyr	His	Tyr	Val	Thr	Ile	Thr	Leu
		115					120					125			
Asp	Leu	Gln	Gln	Val	Phe	Gln	Ile	Ala	Tyr	Val	Ile	Val	Lys	Ala	Ala
	130					135					140				
Asn	Ser	Pro	Arg	Pro	Gly	Asn	Trp	Ile	Leu	Glu	Arg	Ser	Leu	Asp	Asp
145					150					155					160
Val	Glu	Tyr	Lys	Pro	Trp	Gln	Tyr	His	Ala	Val	Thr	Asp	Thr	Glu	Cys
				165					170					175	
Leu	Thr	Leu	Tyr	Asn	Ile	Tyr	Pro	Arg	Thr	Gly	Pro	Pro	Ser	Tyr	Ala
			180					185					190		
Lys	Asp	Asp	Glu	Val	Ile	Cys	Thr	Ser	Phe	Tyr	Ser	Lys	Ile	His	Pro
		195					200					205			
Leu	Glu	Asn	Gly	Glu	Ile	His	Ile	Ser	Leu	Ile	Asn	Gly	Arg	Pro	Ser
	210					215					220				
Ala	Asp	Asp	Pro	Ser	Pro	Glu	Leu	Leu	Glu	Phe	Thr	Ser	Ala	Arg	Tyr
225					230					235					240
Ile	Arg	Leu	Arg	Phe	Gln	Arg	Ile	Arg	Thr	Leu	Asn	Ala	Asp	Leu	Met
				245					250					255	
Met	Phe	Ala	His	Lys	Asp	Pro	Arg	Glu	Ile	Asp	Pro	Ile	Val	Thr	Arg
			260					265					270		
Arg	Tyr	Tyr	Tyr	Ser	Val	Lys	Asp	Ile	Ser	Val	Gly	Gly	Met	Cys	Ile
		275					280					285			
Cys	Tyr	Gly	His	Ala	Arg	Ala	Cys	Pro	Leu	Asp	Pro	Ala	Thr	Asn	Lys
	290					295					300				
Ser	Arg	Cys	Glu	Cys	Glu	His	Asn	Thr	Cys	Gly	Asp	Ser	Cys	Asp	Gln
305					310					315					320
Cys	Cys	Pro	Gly	Phe	His	Gln	Lys	Pro	Trp	Arg	Ala	Gly	Thr	Phe	Leu
				325					330					335	
Thr	Lys	Thr	Glu	Cys	Glu	Ala	Cys	Asn	Cys	His	Gly	Lys	Ala	Glu	Glu
			340					345					350		
Cys	Tyr	Tyr	Asp	Glu	Asn	Val	Ala	Arg	Arg	Asn	Leu	Ser	Leu	Asn	Ile
		355					360					365			
Arg	Gly	Lys	Tyr	Ile	Gly	Gly	Gly	Val	Cys	Ile	Asn	Cys	Thr	Gln	Asn
	370					375					380				
Thr	Ala	Gly	Ile	Asn	Cys	Glu	Thr	Cys	Thr	Asp	Gly	Phe	Phe	Arg	Pro
385					390					395					400

Lys	Gly	Val	Ser	Pro	Asn	Tyr	Pro	Arg	Pro	Cys	Gln	Pro	Cys	His	Cys	
				405					410					415		
Asp	Pro	Ile	Gly	Ser	Leu	Asn	Glu	Val	Cys	Val	Lys	Asp	Glu	Lys	His	
			420					425					430			
Ala	Arg	Arg	Gly	Leu	Ala	Pro	Gly	Ser	Cys	His	Cys	Lys	Thr	Gly	Phe	
		435					440					445				
Gly	Gly	Val	Ser	Cys	Asp	Arg	Cys	Ala	Arg	Gly	Tyr	Thr	Gly	Tyr	Pro	
	450					455					460					
Asp	Cys	Lys	Ala	Cys	Asn	Cys	Ser	Gly	Leu	Gly	Ser	Lys	Asn	Glu	Asp	
465					470					475					480	
Pro	Cys	Phe	Gly	Pro	Cys	Ile	Cys	Lys	Glu	Asn	Val	Glu	Gly	Gly	Asp	
				485					490					495		
Cys	Ser	Arg	Cys	Lys	Ser	Gly	Phe	Phe	Asn	Leu	Gln	Glu	Asp	Asn	Trp	
			500					505					510			
Lys	Gly	Cys	Asp	Glu	Cys	Phe	Cys	Ser	Gly	Val	Ser	Asn	Arg	Cys	Gln	
		515					520					525				
Ser	Ser	Tyr	Trp	Thr	Tyr	Gly	Lys	Ile	Gln	Asp	Met	Ser	Gly	Trp	Tyr	
	530					535					540					
Leu	Thr	Asp	Leu	Pro	Gly	Arg	Ile	Arg	Val	Ala	Pro	Gln	Gln	Asp	Asp	
545					550					555					560	
Leu	Asp	Ser	Pro	Gln	Gln	Ile	Ser	Ile	Ser	Asn	Ala	Glu	Ala	Arg	Gln	
				565					570					575		
Ala	Leu	Pro	His	Ser	Tyr	Tyr	Trp	Ser	Ala	Pro	Ala	Pro	Tyr	Leu	Gly	
			580					585					590			
Asn	Lys	Leu	Pro	Ala	Val	Gly	Gly	Gln	Leu	Thr	Phe	Thr	Ile	Ser	Tyr	
		595					600					605				
Asp	Leu	Glu	Glu	Glu	Glu	Glu	Asp	Thr	Glu	Arg	Val	Leu	Gln	Leu	Met	
	610					615					620					
Ile	Ile	Leu	Glu	Gly	Asn	Asp	Leu	Ser	Ile	Ser	Thr	Ala	Gln	Asp	Glu	
625					630					635					640	
Val	Tyr	Leu	His	Pro	Ser	Glu	Glu	His	Thr	Asn	Val	Leu	Leu	Leu	Lys	
				645					650					655		
Glu	Glu	Ser	Phe	Thr	Ile	His	Gly	Thr	His	Phe	Pro	Val	Arg	Arg	Lys	
			660					665					670			
Glu	Phe	Met	Thr	Val	Leu	Ala	Asn	Leu	Lys	Arg	Val	Leu	Leu	Gln	Ile	
		675					680					685				
Thr	Tyr	Ser	Phe	Gly	Met	Asp	Ala	Ile	Phe	Arg	Leu	Ser	Ser	Val	Asn	
	690					695					700					

Leu	Glu	Ser	Ala	Val	Ser	Tyr	Pro	Thr	Asp	Gly	Ser	Ile	Ala	Ala	Ala	705	710	715	720
Val	Glu	Val	Cys	Gln	Cys	Pro	Pro	Gly	Tyr	Thr	Gly	Ser	Ser	Cys	Glu	725	730	735	
Ser	Cys	Trp	Pro	Arg	His	Arg	Arg	Val	Asn	Gly	Thr	Ile	Phe	Gly	Gly	740	745	750	
Ile	Cys	Glu	Pro	Cys	Gln	Cys	Phe	Gly	His	Ala	Glu	Ser	Cys	Asp	Asp	755	760	765	
Val	Thr	Gly	Glu	Cys	Leu	Asn	Cys	Lys	Asp	His	Thr	Gly	Gly	Pro	Tyr	770	775	780	
Cys	Asp	Lys	Cys	Leu	Pro	Gly	Phe	Tyr	Gly	Glu	Pro	Thr	Lys	Gly	Thr	785	790	795	800
Ser	Glu	Asp	Cys	Gln	Pro	Cys	Ala	Cys	Pro	Leu	Asn	Ile	Pro	Ser	Asn	805	810	815	
Asn	Phe	Ser	Pro	Thr	Cys	His	Leu	Asp	Arg	Ser	Leu	Gly	Leu	Ile	Cys	820	825	830	
Asp	Gly	Cys	Pro	Val	Gly	Tyr	Thr	Gly	Pro	Arg	Cys	Glu	Arg	Cys	Ala	835	840	845	
Glu	Gly	Tyr	Phe	Gly	Gln	Pro	Ser	Val	Pro	Gly	Gly	Ser	Cys	Gln	Pro	850	855	860	
Cys	Gln	Cys	Asn	Asp	Asn	Leu	Asp	Phe	Ser	Ile	Pro	Gly	Ser	Cys	Asp	865	870	875	880
Ser	Leu	Ser	Gly	Ser	Cys	Leu	Ile	Cys	Lys	Pro	Gly	Thr	Thr	Gly	Arg	885	890	895	
Tyr	Cys	Glu	Leu	Cys	Ala	Asp	Gly	Tyr	Phe	Gly	Asp	Ala	Val	Asp	Ala	900	905	910	
Lys	Asn	Cys	Gln	Pro	Cys	Arg	Cys	Asn	Ala	Gly	Gly	Ser	Phe	Ser	Glu	915	920	925	
Val	Cys	His	Ser	Gln	Thr	Gly	Gln	Cys	Glu	Cys	Arg	Ala	Asn	Val	Gln	930	935	940	
Gly	Gln	Arg	Cys	Asp	Lys	Cys	Lys	Ala	Gly	Thr	Phe	Gly	Leu	Gln	Ser	945	950	955	960
Ala	Arg	Gly	Cys	Val	Pro	Cys	Asn	Cys	Asn	Ser	Phe	Gly	Ser	Lys	Ser	965	970	975	
Phe	Asp	Cys	Glu	Glu	Ser	Gly	Gln	Cys	Trp	Cys	Gln	Pro	Gly	Val	Thr	980	985	990	
Gly	Lys	Lys	Cys	Asp	Arg	Cys	Ala	His	Gly	Tyr	Phe	Asn	Phe	Gln	Glu	995	1000	1005	

Gly Gly Cys Thr Ala Cys Glu Cys Ser His Leu Gly Asn Asn Cys Asp
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 Pro Lys Thr Gly Arg Cys Ile Cys Pro Pro Asn Thr Ile Gly Glu Lys
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 Cys Ser Lys Cys Ala Pro Asn Thr Trp Gly His Ser Ile Thr Thr Gly
 1045 1050 1055
 Cys Lys Ala Cys Asn Cys Ser Thr Val Gly Ser Leu Asp Phe Gln Cys
 1060 1065 1070
 Asn Val Asn Thr Gly Gln Cys Asn Cys His Pro Lys Phe Ser Gly Ala
 1075 1080 1085
 Lys Cys Thr Glu Cys Ser Arg Gly His Trp Asn Tyr Pro Arg Cys Asn
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 Leu Cys Asp Cys Phe Leu Pro Gly Thr Asp Ala Thr Thr Cys Asp Ser
 1105 1110 1115 1120
 Glu Thr Lys Lys Cys Ser Cys Ser Asp Gln Thr Gly Gln Cys Thr Cys
 1125 1130 1135
 Lys Val Asn Val Glu Gly Ile His Cys Asp Arg Cys Arg Pro Gly Lys
 1140 1145 1150
 Phe Gly Leu Asp Ala Lys Asn Pro Leu Gly Cys Ser Ser Cys Tyr Cys
 1155 1160 1165
 Phe Gly Thr Thr Thr Gln Cys Ser Glu Ala Lys Gly Leu Ile Arg Thr
 1170 1175 1180
 Trp Val Thr Leu Lys Ala Glu Gln Thr Ile Leu Pro Leu Val Asp Glu
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 Ala Leu Gln His Thr Thr Thr Lys Gly Ile Val Phe Gln His Pro Glu
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 Phe Tyr Trp Lys Leu Pro Glu Gln Phe Glu Gly Lys Lys Leu Met Ala
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 Tyr Gly Gly Lys Leu Lys Tyr Ala Ile Tyr Phe Glu Ala Arg Glu Glu
 1250 1255 1260
 Thr Gly Phe Ser Thr Tyr Asn Pro Gln Val Ile Ile Arg Gly Gly Thr
 1265 1270 1275 1280
 Pro Thr His Ala Arg Ile Ile Val Arg His Met Ala Ala Pro Leu Ile
 1285 1290 1295
 Gly Gln Leu Thr Arg His Glu Ile Glu Met Thr Glu Lys Glu Trp Lys
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Tyr Tyr Gly Asp Asp Pro Arg Val His Arg Thr Val Thr Arg Glu Asp
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 Phe Leu Asp Ile Leu Tyr Asp Ile His Tyr Ile Leu Ile Lys Ala Thr
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 Tyr Gly Asn Phe Met Arg Gln Ser Arg Ile Ser Glu Ile Ser Met Glu
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 Val Ala Glu Gln Gly Arg Gly Thr Thr Met Thr Pro Pro Ala Asp Leu
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 Ile Glu Lys Cys Asp Cys Pro Leu Gly Tyr Ser Gly Leu Ser Cys Glu
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 Ala Cys Leu Pro Gly Phe Tyr Arg Leu Arg Ser Gln Pro Gly Gly Arg
 1395 1400 1405
 Thr Pro Gly Pro Thr Leu Gly Thr Cys Val Pro Cys Gln Cys Asn Gly
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 His Ser Ser Leu Cys Asp Pro Glu Thr Ser Ile Cys Gln Asn Cys Gln
 1425 1430 1435 1440
 His His Thr Ala Gly Asp Phe Cys Glu Arg Cys Ala Leu Gly Tyr Tyr
 1445 1450 1455
 Gly Ile Val Lys Gly Leu Pro Asn Asp Cys Gln Gln Cys Ala Cys Pro
 1460 1465 1470
 Leu Ile Ser Ser Ser Asn Asn Phe Ser Pro Ser Cys Val Ala Glu Gly
 1475 1480 1485
 Leu Asp Asp Tyr Arg Cys Thr Ala Cys Pro Arg Gly Tyr Glu Gly Gln
 1490 1495 1500
 Tyr Cys Glu Arg Cys Ala Pro Gly Tyr Thr Gly Ser Pro Gly Asn Pro
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 Gly Gly Ser Cys Gln Glu Cys Glu Cys Asp Pro Tyr Gly Ser Leu Pro
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 Val Pro Cys Asp Pro Val Thr Gly Phe Cys Thr Cys Arg Pro Gly Ala
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 Thr Gly Arg Lys Cys Asp Gly Cys Lys His Trp His Ala Arg Glu Gly
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 Trp Glu Cys Val Phe Cys Gly Asp Glu Cys Thr Gly Leu Leu Leu Gly
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 Asp Leu Ala Arg Leu Glu Gln Met Val Met Ser Ile Asn Leu Thr Gly
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 Pro Leu Pro Ala Pro Tyr Lys Met Leu Tyr Gly Leu Glu Asn Met Thr
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Gln Glu Leu Lys His Leu Leu Ser Pro Gln Arg Ala Pro Glu Arg Leu
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 Ile Gln Leu Ala Glu Gly Asn Leu Asn Thr Leu Val Thr Glu Met Asn
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 Glu Leu Leu Thr Arg Ala Thr Lys Val Thr Ala Asp Gly Glu Gln Thr
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 Gly Gln Asp Ala Glu Arg Thr Asn Thr Arg Ala Lys Ser Leu Gly Glu
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 Ser Arg Gly Glu Asn Glu Glu Met Glu Lys Asp Leu Arg Glu Lys Leu
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 Ala Asp Tyr Lys Asn Lys Val Asp Asp Ala Trp Asp Leu Leu Arg Glu
 1780 1785 1790
 Ala Thr Asp Lys Ile Arg Glu Ala Asn Arg Leu Phe Ala Val Asn Gln
 1795 1800 1805
 Lys Asn Met Thr Ala Leu Glu Lys Lys Lys Glu Ala Val Glu Ser Gly
 1810 1815 1820
 Lys Arg Gln Ile Glu Asn Thr Leu Lys Glu Gly Asn Asp Ile Leu Asp
 1825 1830 1835 1840
 Glu Ala Asn Arg Leu Ala Asp Glu Ile Asn Ser Ile Ile Asp Tyr Val
 1845 1850 1855
 Glu Asp Ile Gln Thr Lys Leu Pro Pro Met Ser Glu Glu Leu Asn Asp
 1860 1865 1870
 Lys Ile Asp Asp Leu Ser Gln Glu Ile Lys Asp Arg Lys Leu Ala Glu
 1875 1880 1885
 Lys Val Ser Gln Ala Glu Ser His Ala Ala Gln Leu Asn Asp Ser Ser
 1890 1895 1900
 Ala Val Leu Asp Gly Ile Leu Asp Glu Ala Lys Asn Ile Ser Phe Asn
 1905 1910 1915 1920

Ala Thr Ala Ala Phe Lys Ala Tyr Ser Asn Ile Lys Asp Tyr Ile Asp
 1925 1930 1935
 Glu Ala Glu Lys Val Ala Lys Glu Ala Lys Asp Leu Ala His Glu Ala
 1940 1945 1950
 Thr Lys Leu Ala Thr Gly Pro Arg Gly Leu Leu Lys Glu Asp Ala Lys
 1955 1960 1965
 Gly Cys Leu Gln Lys Ser Phe Arg Ile Leu Asn Glu Ala Lys Lys Leu
 1970 1975 1980
 Ala Asn Asp Val Lys Glu Asn Glu Asp His Leu Asn Gly Leu Lys Thr
 1985 1990 1995 2000
 Arg Ile Glu Asn Ala Asp Ala Arg Asn Gly Asp Leu Leu Arg Thr Leu
 2005 2010 2015
 Asn Asp Thr Leu Gly Lys Leu Ser Ala Ile Pro Asn Asp Thr Ala Ala
 2020 2025 2030
 Lys Leu Gln Ala Val Lys Asp Lys Ala Arg Gln Ala Asn Asp Thr Ala
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 Lys Asp Val Leu Ala Gln Ile Thr Glu Leu His Gln Asn Leu Asp Gly
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 Leu Lys Lys Asn Tyr Asn Lys Leu Ala Asp Ser Val Ala Lys Thr Asn
 2065 2070 2075 2080
 Ala Val Val Lys Asp Pro Ser Lys Asn Lys Ile Ile Ala Asp Ala Asp
 2085 2090 2095
 Ala Thr Val Lys Asn Leu Glu Gln Glu Ala Asp Arg Leu Ile Asp Lys
 2100 2105 2110
 Leu Lys Pro Ile Lys Glu Leu Glu Asp Asn Leu Lys Lys Asn Ile Ser
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 Glu Ile Lys Glu Leu Ile Asn Gln Ala Arg Lys Gln Ala Asn Ser Ile
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 Lys Val Ser Val Ser Ser Gly Gly Asp Cys Ile Arg Thr Tyr Lys Pro
 2145 2150 2155 2160
 Glu Ile Lys Lys Gly Ser Tyr Asn Asn Ile Val Val Asn Val Lys Thr
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 Ala Val Ala Asp Asn Leu Leu Phe Tyr Leu Gly Ser Ala Lys Phe Ile
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 Asp Phe Leu Ala Ile Glu Met Arg Lys Gly Lys Val Ser Phe Leu Trp
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 Gly Thr Ile Ser Val Arg Ala Leu Asp Gly Pro Lys Ala Ser Ile Val
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 Pro Ser Thr His His Ser Thr Ser Pro Pro Gly Tyr Thr Ile Leu Asp
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 Val Asp Ala Asn Ala Met Leu Phe Val Gly Gly Leu Thr Gly Lys Leu
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 Lys Lys Ala Asp Ala Val Arg Val Ile Thr Phe Thr Gly Cys Met Gly
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 Glu Thr Tyr Phe Asp Asn Lys Pro Ile Gly Leu Trp Asn Phe Arg Glu
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 Lys Glu Gly Asp Cys Lys Gly Cys Thr Val Ser Pro Gln Val Glu Asp
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 Ser Glu Gly Thr Ala Thr Arg Asp Leu Arg Asp Phe Met Ser Val Glu
 2340 2345 2350
 Leu Thr Asp Gly His Ile Lys Val Ser Tyr Asp Leu Gly Ser Gly Met
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 Ala Ser Val Val Ser Asn Gln Asn His Asn Asp Gly Lys Trp Lys Ser
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 Phe Thr Leu Ser Arg Ile Gln Lys Gln Ala Asn Ile Ser Ile Val Asp
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 Cys Ser Leu Glu Asn Val Tyr Thr Val Ser Phe Pro Lys Pro Gly Phe
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 Ser Phe Ser Thr Lys Asn Glu Ser Gly Ile Ile Leu Leu Gly Ser Gly
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Gly Thr Pro Ala Pro Pro Arg Arg Lys Arg Arg Gln Thr Gly Gln Ala
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Tyr Tyr Val Ile Leu Leu Asn Arg Gly Arg Leu Glu Val His Leu Ser
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Thr Gly Ala Arg Thr Met Arg Lys Ile Val Ile Arg Pro Glu Pro Asn
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Leu Phe His Asp Gly Arg Glu His Ser Val His Val Glu Arg Thr Arg
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Gly Ile Phe Thr Val Gln Val Asp Glu Asn Arg Arg Tyr Met Gln Asn
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Leu Thr Val Glu Gln Pro Ile Glu Val Lys Lys Leu Phe Val Gly Gly
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Ala Pro Pro Glu Phe Gln Pro Ser Pro Leu Arg Asn Ile Pro Pro Phe
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Glu Gly Cys Ile Trp Asn Leu Val Ile Asn Ser Val Pro Met Asp Phe
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Ala Arg Pro Val Ser Phe Lys Asn Ala Asp Ile Gly Arg Cys Ala His
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Gln Lys Leu Arg Glu Asp Glu Asp Gly Ala Ala Pro Ala Glu Ile Val
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Ile Gln Pro Glu Pro Val Pro Thr Pro Ala Phe Pro Thr Pro Thr Pro
 2690 2695 2700

Val Leu Thr His Gly Pro Cys Ala Ala Glu Ser Glu Pro Ala Leu Leu
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Ile Gly Ser Lys Gln Phe Gly Leu Ser Arg Asn Ser His Ile Ala Ile
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Ala Phe Asp Asp Thr Lys Val Lys Asn Arg Leu Thr Ile Glu Leu Glu
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Val Arg Thr Glu Ala Glu Ser Gly Leu Leu Phe Tyr Met Ala Ala Ile
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Asn His Ala Asp Phe Ala Thr Val Gln Leu Arg Asn Gly Leu Pro Tyr
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Phe Ser Tyr Asp Leu Gly Ser Gly Asp Thr His Thr Met Ile Pro Thr
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Lys Ile Asn Asp Gly Gln Trp His Lys Ile Lys Ile Met Arg Ser Lys
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Gln Glu Gly Ile Leu Tyr Val Asp Gly Ala Ser Asn Arg Thr Ile Ser
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Pro Lys Lys Ala Asp Ile Leu Asp Val Val Gly Met Leu Tyr Val Gly
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Gly Leu Pro Ile Asn Tyr Thr Thr Arg Arg Ile Gly Pro Val Thr Tyr
2850 2855 2860

Ser Ile Asp Gly Cys Val Arg Asn Leu His Met Ala Glu Ala Pro Ala
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Asp Leu Glu Gln Pro Thr Ser Ser Phe His Val Gly Thr Cys Phe Ala
2885 2890 2895

Asn Ala Gln Arg Gly Thr Tyr Phe Asp Gly Thr Gly Phe Ala Lys Ala
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Val Gly Gly Phe Lys Val Gly Leu Asp Leu Leu Val Glu Phe Glu Phe
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Ala Thr Thr Thr Thr Thr Gly Val Leu Leu Gly Ile Ser Ser Gln Lys
2930 2935 2940

Met Asp Gly Met Gly Ile Glu Met Ile Asp Glu Lys Leu Met Phe His
2945 2950 2955 2960

Val Asp Asn Gly Ala Gly Arg Phe Thr Ala Val Tyr Asp Ala Gly Val
2965 2970 2975

Pro Gly His Leu Cys Asp Gly Gln Trp His Lys Val Thr Ala Asn Lys
2980 2985 2990

Ile Lys His Arg Ile Glu Leu Thr Val Asp Gly Asn Gln Val Glu Ala
2995 3000 3005

Gln Ser Pro Asn Pro Ala Ser Thr Ser Ala Asp Thr Asn Asp Pro Val
3010 3015 3020

Phe Val Gly Gly Phe Pro Asp Asp Leu Lys Gln Phe Gly Leu Thr Thr
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Thr Ala Ser His Trp Arg Leu Ile Leu Pro Arg Pro Trp Asn
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Leu Leu Ser Ile Leu His Pro Ser Arg Pro Gly Gly Val Pro Gly Ala
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Ile Pro Gly Gly Val Pro Gly Gly Val Phe Tyr Pro Gly Ala Gly Leu
 35 40 45
 Gly Ala Leu Gly Gly Gly Ala Leu Gly Pro Gly Gly Lys Pro Leu Lys
 50 55 60
 Pro Val Pro Gly Gly Leu Ala Gly Ala Gly Leu Gly Ala Gly Leu Gly
 65 70 75 80
 Ala Phe Pro Ala Val Thr Phe Pro Gly Ala Leu Val Pro Gly Gly Val
 85 90 95
 Ala Asp Ala Ala Ala Tyr Lys Ala Ala Lys Ala Gly Ala Gly Leu
 100 105 110
 Gly Gly Val Pro Gly Val Gly Gly Leu Gly Val Ser Ala Gly Ala Val
 115 120 125
 Val Pro Gln Pro Gly Ala Gly Val Lys Pro Gly Lys Val Pro Gly Val
 130 135 140
 Gly Leu Pro Gly Val Tyr Pro Gly Gly Val Leu Pro Gly Ala Arg Phe
 145 150 155 160
 Pro Gly Val Gly Val Leu Pro Gly Val Pro Thr Gly Ala Gly Val Lys
 165 170 175
 Pro Lys Ala Pro Gly Val Gly Gly Ala Phe Ala Gly Ile Pro Gly Val
 180 185 190
 Gly Pro Phe Gly Gly Pro Gln Pro Gly Val Pro Leu Gly Tyr Pro Ile
 195 200 205
 Lys Ala Pro Lys Leu Pro Gly Gly Tyr Gly Leu Pro Tyr Thr Thr Gly
 210 215 220
 Lys Leu Pro Tyr Gly Tyr Gly Pro Gly Gly Val Ala Gly Ala Ala Gly
 225 230 235 240
 Lys Ala Gly Tyr Pro Thr Gly Thr Gly Val Gly Pro Gln Ala Ala Ala
 245 250 255
 Ala Ala Ala Ala Lys Ala Ala Ala Lys Phe Gly Ala Gly Ala Ala Gly
 260 265 270
 Val Leu Pro Gly Val Gly Gly Ala Gly Val Pro Gly Val Pro Gly Ala
 275 280 285
 Ile Pro Gly Ile Gly Gly Ile Ala Gly Val Gly Thr Pro Ala Ala Ala
 290 295 300
 Ala Ala Ala Ala Ala Ala Lys Ala Ala Lys Tyr Gly Ala Ala Ala
 305 310 315 320
 Gly Leu Val Pro Gly Gly Pro Gly Phe Gly Pro Gly Val Val Gly Val
 325 330 335

Pro Gly Ala Gly Val Pro Gly Val Gly Val Pro Gly Ala Gly Ile Pro
 340 345 350
 Val Val Pro Gly Ala Gly Ile Pro Gly Ala Ala Val Pro Gly Val Val
 355 360 365
 Ser Pro Glu Ala Ala Ala Lys Ala Ala Lys Ala Ala Lys Tyr Gly
 370 375 380
 Ala Arg Pro Gly Val Gly Val Gly Gly Ile Pro Thr Tyr Gly Val Gly
 385 390 395 400
 Ala Gly Gly Phe Pro Gly Phe Gly Val Gly Val Gly Gly Ile Pro Gly
 405 410 415
 Val Ala Gly Val Pro Ser Val Gly Gly Val Pro Gly Val Gly Gly Val
 420 425 430
 Pro Gly Val Gly Ile Ser Pro Glu Ala Gln Ala Ala Ala Ala Lys
 435 440 445
 Ala Ala Lys Tyr Gly Val Gly Thr Pro Ala Ala Ala Ala Lys Ala
 450 455 460
 Ala Ala Lys Ala Ala Gln Phe Ala Leu Leu Asn Leu Ala Gly Leu Val
 465 470 475 480
 Pro Gly Val Gly Val Ala Pro Gly Val Gly Val Ala Pro Gly Val Gly
 485 490 495
 Val Ala Pro Gly Val Gly Leu Ala Pro Gly Val Gly Val Ala Pro Gly
 500 505 510
 Val Gly Val Ala Pro Gly Val Gly Val Ala Pro Gly Ile Gly Pro Gly
 515 520 525
 Gly Val Ala Ala Ala Ala Lys Ser Ala Ala Lys Val Ala Ala Lys Ala
 530 535 540
 Gln Leu Arg Ala Ala Ala Gly Leu Gly Ala Gly Ile Pro Gly Leu Gly
 545 550 555 560
 Val Gly Val Gly Val Pro Gly Leu Gly Val Gly Ala Gly Val Pro Gly
 565 570 575
 Leu Gly Val Gly Ala Gly Val Pro Gly Phe Gly Ala Val Pro Gly Ala
 580 585 590
 Leu Ala Ala Ala Lys Ala Ala Lys Tyr Gly Ala Ala Val Pro Gly Val
 595 600 605
 Leu Gly Gly Leu Gly Ala Leu Gly Gly Val Gly Ile Pro Gly Gly Val
 610 615 620
 Val Gly Ala Gly Pro Ala Ala Ala Ala Ala Ala Lys Ala Ala Ala
 625 630 635 640

Lys Ala Ala Gln Phe Gly Leu Val Gly Ala Ala Gly Leu Gly Gly Leu
645 650 655

Gly Val Gly Gly Leu Gly Val Pro Gly Val Gly Gly Leu Gly Gly Ile
660 665 670

Pro Pro Ala Ala Ala Ala Lys Ala Ala Lys Tyr Gly Ala Ala Gly Leu
675 680 685

Gly Gly Val Leu Gly Gly Ala Gly Gln Phe Pro Leu Gly Gly Val Ala
690 695 700

Ala Arg Pro Gly Phe Gly Leu Ser Pro Ile Phe Pro Gly Gly Ala Cys
705 710 715 720

Leu Gly Lys Ala Cys Gly Arg Lys Arg Lys
725 730

<210> 9
<211> 1712
<212> PRT
<213> Homo sapiens

<400> 9
Met Gly Arg Asp Gln Arg Ala Val Ala Gly Pro Ala Leu Arg Arg Trp
1 5 10 15

Leu Leu Leu Gly Thr Val Thr Val Gly Phe Leu Ala Gln Ser Val Leu
20 25 30

Ala Gly Val Lys Lys Phe Asp Val Pro Cys Gly Gly Arg Asp Cys Ser
35 40 45

Gly Gly Cys Gln Cys Tyr Pro Glu Lys Gly Gly Arg Gly Gln Pro Gly
50 55 60

Pro Val Gly Pro Gln Gly Tyr Asn Gly Pro Pro Gly Leu Gln Gly Phe
65 70 75 80

Pro Gly Leu Gln Gly Arg Lys Gly Asp Lys Gly Glu Arg Gly Ala Pro
85 90 95

Gly Val Thr Gly Pro Lys Gly Asp Val Gly Ala Arg Gly Val Ser Gly
100 105 110

Phe Pro Gly Ala Asp Gly Ile Pro Gly His Pro Gly Gln Gly Gly Pro
115 120 125

Arg Gly Arg Pro Gly Tyr Asp Gly Cys Asn Gly Thr Gln Gly Asp Ser
130 135 140

Gly Pro Gln Gly Pro Pro Gly Ser Glu Gly Phe Thr Gly Pro Pro Gly
145 150 155 160

Pro Gln Gly Pro Lys Gly Gln Lys Gly Glu Pro Tyr Ala Leu Pro Lys
165 170 175

Glu Glu Arg Asp Arg Tyr Arg Gly Glu Pro Gly Glu Pro Gly Leu Val
 180 185 190
 Gly Phe Gln Gly Pro Pro Gly Arg Pro Gly His Val Gly Gln Met Gly
 195 200 205
 Pro Val Gly Ala Pro Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Pro
 210 215 220
 Lys Gly Gln Gln Gly Asn Arg Gly Leu Gly Phe Tyr Gly Val Lys Gly
 225 230 235 240
 Glu Lys Gly Asp Val Gly Gln Pro Gly Pro Asn Gly Ile Pro Ser Asp
 245 250 255
 Thr Leu His Pro Ile Ile Ala Pro Thr Gly Val Thr Phe His Pro Asp
 260 265 270
 Gln Tyr Lys Gly Glu Lys Gly Ser Glu Gly Glu Pro Gly Ile Arg Gly
 275 280 285
 Ile Ser Leu Lys Gly Glu Glu Gly Ile Met Gly Phe Pro Gly Leu Arg
 290 295 300
 Gly Tyr Pro Gly Leu Ser Gly Glu Lys Gly Ser Pro Gly Gln Lys Gly
 305 310 315 320
 Ser Arg Gly Leu Asp Gly Tyr Gln Gly Pro Asp Gly Pro Arg Gly Pro
 325 330 335
 Lys Gly Glu Ala Gly Asp Pro Gly Pro Pro Gly Leu Pro Ala Tyr Ser
 340 345 350
 Pro His Pro Ser Leu Ala Lys Gly Ala Arg Gly Asp Pro Gly Phe Pro
 355 360 365
 Gly Ala Gln Gly Glu Pro Gly Ser Gln Gly Glu Pro Gly Asp Pro Gly
 370 375 380
 Leu Pro Gly Pro Pro Gly Leu Ser Ile Gly Asp Gly Asp Gln Arg Arg
 385 390 395 400
 Gly Leu Pro Gly Glu Met Gly Pro Lys Gly Phe Ile Gly Asp Pro Gly
 405 410 415
 Ile Pro Ala Leu Tyr Gly Gly Pro Pro Gly Pro Asp Gly Lys Arg Gly
 420 425 430
 Pro Pro Gly Pro Pro Gly Leu Pro Gly Pro Pro Gly Pro Asp Gly Phe
 435 440 445
 Leu Phe Gly Leu Lys Gly Ala Lys Gly Arg Ala Gly Phe Pro Gly Leu
 450 455 460
 Pro Gly Ser Pro Gly Ala Arg Gly Pro Lys Gly Trp Lys Gly Asp Ala
 465 470 475 480

Gly	Glu	Cys	Arg	Cys	Thr	Glu	Gly	Asp	Glu	Ala	Ile	Lys	Gly	Leu	Pro	485	490	495
Gly	Leu	Pro	Gly	Pro	Lys	Gly	Phe	Ala	Gly	Ile	Asn	Gly	Glu	Pro	Gly	500	505	510
Arg	Lys	Gly	Asp	Lys	Gly	Asp	Pro	Gly	Gln	His	Gly	Leu	Pro	Gly	Phe	515	520	525
Pro	Gly	Leu	Lys	Gly	Val	Pro	Gly	Asn	Ile	Gly	Ala	Pro	Gly	Pro	Lys	530	535	540
Gly	Ala	Lys	Gly	Asp	Ser	Arg	Thr	Ile	Thr	Thr	Lys	Gly	Glu	Arg	Gly	545	550	555
Gln	Pro	Gly	Val	Pro	Gly	Val	Pro	Gly	Met	Lys	Gly	Asp	Asp	Gly	Ser	565	570	575
Pro	Gly	Arg	Asp	Gly	Leu	Asp	Gly	Phe	Pro	Gly	Leu	Pro	Gly	Pro	Pro	580	585	590
Gly	Asp	Gly	Ile	Lys	Gly	Pro	Pro	Gly	Asp	Pro	Gly	Tyr	Pro	Gly	Ile	595	600	605
Pro	Gly	Thr	Lys	Gly	Thr	Pro	Gly	Glu	Met	Gly	Pro	Pro	Gly	Leu	Gly	610	615	620
Leu	Pro	Gly	Leu	Lys	Gly	Gln	Arg	Gly	Phe	Pro	Gly	Asp	Ala	Gly	Leu	625	630	635
Pro	Gly	Pro	Pro	Gly	Phe	Leu	Gly	Pro	Pro	Gly	Pro	Ala	Gly	Thr	Pro	645	650	655
Gly	Gln	Ile	Asp	Cys	Asp	Thr	Asp	Val	Lys	Arg	Ala	Val	Gly	Gly	Asp	660	665	670
Arg	Gln	Glu	Ala	Ile	Gln	Pro	Gly	Cys	Ile	Ala	Gly	Pro	Lys	Gly	Leu	675	680	685
Pro	Gly	Leu	Pro	Gly	Pro	Pro	Gly	Pro	Thr	Gly	Ala	Lys	Gly	Leu	Arg	690	695	700
Gly	Ile	Pro	Gly	Phe	Ala	Gly	Ala	Asp	Gly	Gly	Pro	Gly	Pro	Arg	Gly	705	710	715
Leu	Pro	Gly	Asp	Ala	Gly	Arg	Glu	Gly	Phe	Pro	Gly	Pro	Pro	Gly	Phe	725	730	735
Ile	Gly	Pro	Arg	Gly	Ser	Lys	Gly	Ala	Val	Gly	Leu	Pro	Gly	Pro	Asp	740	745	750
Gly	Ser	Pro	Gly	Pro	Ile	Gly	Leu	Pro	Gly	Pro	Asp	Gly	Pro	Pro	Gly	755	760	765
Glu	Arg	Gly	Leu	Pro	Gly	Glu	Val	Leu	Gly	Ala	Gln	Pro	Gly	Pro	Arg	770	775	780

Gly	Asp	Ala	Gly	Val	Pro	Gly	Gln	Pro	Gly	Leu	Lys	Gly	Leu	Pro	Gly		785		790		795		800
Asp	Arg	Gly	Pro	Pro	Gly	Phe	Arg	Gly	Ser	Gln	Gly	Met	Pro	Gly	Met			805		810		815	
Pro	Gly	Leu	Lys	Gly	Gln	Pro	Gly	Leu	Pro	Gly	Pro	Ser	Gly	Gln	Pro			820		825		830	
Gly	Leu	Tyr	Gly	Pro	Pro	Gly	Leu	His	Gly	Phe	Pro	Gly	Ala	Pro	Gly			835		840		845	
Gln	Glu	Gly	Pro	Leu	Gly	Leu	Pro	Gly	Ile	Pro	Gly	Arg	Glu	Gly	Leu		850		855		860		
Pro	Gly	Asp	Arg	Gly	Asp	Pro	Gly	Asp	Thr	Gly	Ala	Pro	Gly	Pro	Val		865		870		875		880
Gly	Met	Lys	Gly	Leu	Ser	Gly	Asp	Arg	Gly	Asp	Ala	Gly	Phe	Thr	Gly			885		890		895	
Glu	Gln	Gly	His	Pro	Gly	Ser	Pro	Gly	Phe	Lys	Gly	Ile	Asp	Gly	Met			900		905		910	
Pro	Gly	Thr	Pro	Gly	Leu	Lys	Gly	Asp	Arg	Gly	Ser	Pro	Gly	Met	Asp			915		920		925	
Gly	Phe	Gln	Gly	Met	Pro	Gly	Leu	Lys	Gly	Arg	Pro	Gly	Phe	Pro	Gly		930		935		940		
Ser	Lys	Gly	Glu	Ala	Gly	Phe	Phe	Gly	Ile	Pro	Gly	Leu	Lys	Gly	Leu		945		950		955		960
Ala	Gly	Glu	Pro	Gly	Phe	Lys	Gly	Ser	Arg	Gly	Asp	Pro	Gly	Pro	Pro			965		970		975	
Gly	Pro	Pro	Pro	Val	Ile	Leu	Pro	Gly	Met	Lys	Asp	Ile	Lys	Gly	Glu			980		985		990	
Lys	Gly	Asp	Glu	Gly	Pro	Met	Gly	Leu	Lys	Gly	Tyr	Leu	Gly	Ala	Lys			995		1000		1005	
Gly	Ile	Gln	Gly	Met	Pro	Gly	Ile	Pro	Gly	Leu	Ser	Gly	Ile	Pro	Gly		1010		1015		1020		
Leu	Pro	Gly	Arg	Pro	Gly	His	Ile	Lys	Gly	Val	Lys	Gly	Asp	Ile	Gly		1025		1030		1035		1040
Val	Pro	Gly	Ile	Pro	Gly	Leu	Pro	Gly	Phe	Pro	Gly	Val	Ala	Gly	Pro			1045		1050		1055	
Pro	Gly	Ile	Thr	Gly	Phe	Pro	Gly	Phe	Ile	Gly	Ser	Arg	Gly	Asp	Lys			1060		1065		1070	
Gly	Ala	Pro	Gly	Arg	Ala	Gly	Leu	Tyr	Gly	Glu	Ile	Gly	Ala	Thr	Gly		1075		1080		1085		

Asp Phe Gly Asp Ile Gly Asp Thr Ile Asn Leu Pro Gly Arg Pro Gly
 1090 1095 1100

Leu Lys Gly Glu Arg Gly Thr Thr Gly Ile Pro Gly Leu Lys Gly Phe
 1105 1110 1115 1120

Phe Gly Glu Lys Gly Thr Glu Gly Asp Ile Gly Phe Pro Gly Ile Thr
 1125 1130 1135

Gly Val Thr Gly Val Gln Gly Pro Pro Gly Leu Lys Gly Gln Thr Gly
 1140 1145 1150

Phe Pro Gly Leu Thr Gly Pro Pro Gly Ser Gln Gly Glu Leu Gly Arg
 1155 1160 1165

Ile Gly Leu Pro Gly Gly Lys Gly Asp Asp Gly Trp Pro Gly Ala Pro
 1170 1175 1180

Gly Leu Pro Gly Phe Pro Gly Leu Arg Gly Ile Arg Gly Leu His Gly
 1185 1190 1195 1200

Leu Pro Gly Thr Lys Gly Phe Pro Gly Ser Pro Gly Ser Asp Ile His
 1205 1210 1215

Gly Asp Pro Gly Phe Pro Gly Pro Pro Gly Glu Arg Gly Asp Pro Gly
 1220 1225 1230

Glu Ala Asn Thr Leu Pro Gly Pro Val Gly Val Pro Gly Gln Lys Gly
 1235 1240 1245

Asp Gln Gly Ala Pro Gly Glu Arg Gly Pro Pro Gly Ser Pro Gly Leu
 1250 1255 1260

Gln Gly Phe Pro Gly Ile Thr Pro Pro Ser Asn Ile Ser Gly Ala Pro
 1265 1270 1275 1280

Gly Asp Lys Gly Ala Pro Gly Ile Phe Gly Leu Lys Gly Tyr Arg Gly
 1285 1290 1295

Pro Pro Gly Pro Pro Gly Ser Ala Ala Leu Pro Gly Ser Lys Gly Asp
 1300 1305 1310

Thr Gly Asn Pro Gly Ala Pro Gly Thr Pro Gly Thr Lys Gly Trp Ala
 1315 1320 1325

Gly Asp Ser Gly Pro Gln Gly Arg Pro Gly Val Phe Gly Leu Pro Gly
 1330 1335 1340

Glu Lys Gly Pro Arg Gly Glu Gln Gly Phe Met Gly Asn Thr Gly Pro
 1345 1350 1355 1360

Thr Gly Ala Val Gly Asp Arg Gly Pro Lys Gly Pro Lys Gly Asp Pro
 1365 1370 1375

Gly Phe Pro Gly Ala Pro Gly Thr Val Gly Ala Pro Gly Ile Ala Gly
 1380 1385 1390

Ile Pro Gln Lys Ile Ala Ile Gln Pro Gly Thr Val Gly Pro Gln Gly
 1395 1400 1405

Arg Arg Gly Pro Pro Gly Ala Pro Gly Glu Ile Gly Pro Gln Gly Pro
 1410 1415 1420

Pro Gly Glu Pro Gly Phe Arg Gly Ala Pro Gly Lys Ala Gly Pro Gln
 1425 1430 1435 1440

Gly Arg Gly Gly Val Ser Ala Val Pro Gly Phe Arg Gly Asp Glu Gly
 1445 1450 1455

Pro Ile Gly His Gln Gly Pro Ile Gly Gln Glu Gly Ala Pro Gly Arg
 1460 1465 1470

Pro Gly Ser Pro Gly Leu Pro Gly Met Pro Gly Arg Ser Val Ser Ile
 1475 1480 1485

Gly Tyr Leu Leu Val Lys His Ser Gln Thr Asp Gln Glu Pro Met Cys
 1490 1495 1500

Pro Val Gly Met Asn Lys Leu Trp Ser Gly Tyr Ser Leu Leu Tyr Phe
 1505 1510 1515 1520

Glu Gly Gln Glu Lys Ala His Asn Gln Asp Leu Gly Leu Ala Gly Ser
 1525 1530 1535

Cys Leu Ala Arg Phe Ser Thr Met Pro Phe Leu Tyr Cys Asn Pro Gly
 1540 1545 1550

Asp Val Cys Tyr Tyr Ala Ser Arg Asn Asp Lys Ser Tyr Trp Leu Ser
 1555 1560 1565

Thr Thr Ala Pro Leu Pro Met Met Pro Val Ala Glu Asp Glu Ile Lys
 1570 1575 1580

Pro Tyr Ile Ser Arg Cys Ser Val Cys Glu Ala Pro Ala Ile Ala Ile
 1585 1590 1595 1600

Ala Val His Ser Gln Asp Val Ser Ile Pro His Cys Pro Ala Gly Trp
 1605 1610 1615

Arg Ser Leu Trp Ile Gly Tyr Ser Phe Leu Met His Thr Ala Ala Gly
 1620 1625 1630

Asp Glu Gly Gly Gly Gln Ser Leu Val Ser Pro Gly Ser Cys Leu Glu
 1635 1640 1645

Asp Phe Arg Ala Thr Pro Phe Ile Glu Cys Asn Gly Gly Arg Gly Thr
 1650 1655 1660

Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr Thr Ile Pro
 1665 1670 1675 1680

Glu Gln Ser Phe Gln Gly Ser Pro Ser Ala Asp Thr Leu Lys Ala Gly
 1685 1690 1695

Leu Ile Arg Thr His Ile Ser Arg Cys Gln Val Cys Met Lys Asn Leu
 1700 1705 1710

<210> 10
 <211> 122
 <212> PRT
 <213> Homo sapiens

<400> 10
 Met Glu Ala Ser Ala Leu Thr Ser Ser Ala Val Thr Ser Val Ala Lys
 1 5 10 15
 Val Val Arg Val Ala Ser Gly Ser Ala Val Val Leu Pro Leu Ala Arg
 20 25 30
 Ile Ala Thr Val Val Ile Gly Gly Val Val Ala Met Ala Ala Val Pro
 35 40 45
 Met Val Leu Ser Ala Met Gly Phe Thr Ala Ala Gly Ile Ala Ser Ser
 50 55 60
 Ser Ile Ala Ala Lys Met Met Ser Ala Ala Ala Ile Ala Asn Gly Gly
 65 70 75 80
 Gly Val Ala Ser Gly Ser Leu Val Gly Thr Leu Gln Ser Leu Gly Ala
 85 90 95
 Thr Gly Leu Ser Gly Leu Thr Lys Phe Ile Leu Gly Ser Ile Gly Ser
 100 105 110
 Ala Ile Ala Ala Val Ile Ala Arg Phe Tyr
 115 120

<210> 11
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 11
 Met Ala Arg Gly Gly Arg Gly Arg Arg Leu Gly Leu Ala Leu Gly Leu
 1 5 10 15
 Leu Leu Ala Leu Val Leu Ala Pro Arg Val Leu Arg Ala Lys Pro Thr
 20 25 30
 Val Arg Lys Glu Arg Val Val Arg Pro Asp Ser Glu Leu Gly Glu Arg
 35 40 45
 Pro Pro Glu Asp Asn Gln Ser Phe Gln Tyr Asp His Glu Ala Phe Leu
 50 55 60
 Gly Lys Glu Asp Ser Lys Thr Phe Asp Gln Leu Thr Pro Asp Glu Ser
 65 70 75 80
 Lys Glu Arg Leu Gly Lys Ile Val Asp Arg Ile Asp Asn Asp Gly Asp
 85 90 95

Gly Phe Val Thr Thr Glu Glu Leu Lys Thr Trp Ile Lys Arg Val Gln
 100 105 110
 Lys Arg Tyr Ile Phe Asp Asn Val Ala Lys Val Trp Lys Asp Tyr Asp
 115 120 125
 Arg Asp Lys Asp Asp Lys Ile Ser Trp Glu Glu Tyr Lys Gln Ala Thr
 130 135 140
 Tyr Gly Tyr Tyr Leu Gly Asn Pro Ala Glu Phe His Asp Ser Ser Asp
 145 150 155 160
 His His Thr Phe Lys Lys Met Leu Pro Arg Asp Glu Arg Arg Phe Lys
 165 170 175
 Ala Ala Asp Leu Asn Gly Asp Leu Thr Ala Thr Arg Glu Glu Phe Thr
 180 185 190
 Ala Phe Leu His Pro Glu Glu Phe Glu His Met Lys Glu Ile Val Val
 195 200 205
 Leu Glu Thr Leu Glu Asp Ile Asp Lys Asn Gly Asp Gly Phe Val Asp
 210 215 220
 Gln Asp Glu Tyr Ile Ala Asp Met Phe Ser His Glu Glu Asn Gly Pro
 225 230 235 240
 Glu Pro Asp Trp Val Leu Ser Glu Arg Glu Gln Phe Asn Glu Phe Arg
 245 250 255
 Asp Leu Asn Lys Asp Gly Lys Leu Asp Lys Asp Glu Ile Arg His Trp
 260 265 270
 Ile Leu Pro Gln Asp Tyr Asp His Ala Gln Ala Glu Ala Arg His Leu
 275 280 285
 Val Tyr Glu Ser Asp Lys Asn Lys Asp Glu Lys Leu Thr Lys Glu Glu
 290 295 300
 Ile Leu Glu Asn Trp Asn Met Phe Val Gly Ser Gln Ala Thr Asn Tyr
 305 310 315 320
 Gly Glu Asp Leu Thr Lys Asn His Asp Glu Leu
 325 330

<210> 12

<211> 512

<212> PRT

<213> Homo sapiens

<400> 12

Met Ala Thr Ala Asn Gly Ala Val Glu Asn Gly Gln Pro Asp Gly Lys
 1 5 10 15

Pro Pro Ala Leu Pro Arg Pro Ile Arg Asn Leu Glu Val Lys Phe Thr
 20 25 30

Lys	Ile	Phe	Ile	Asn	Asn	Glu	Trp	His	Glu	Ser	Lys	Ser	Gly	Lys	Lys	35	40	45	
Phe	Ala	Thr	Cys	Asn	Pro	Ser	Thr	Arg	Glu	Gln	Ile	Cys	Glu	Val	Glu	50	55	60	
Glu	Gly	Asp	Lys	Pro	Asp	Val	Asp	Lys	Ala	Val	Glu	Ala	Ala	Gln	Val	65	70	75	80
Ala	Phe	Gln	Arg	Gly	Ser	Pro	Trp	Arg	Arg	Leu	Asp	Ala	Leu	Ser	Arg	85	90	95	
Gly	Arg	Leu	Leu	His	Gln	Leu	Ala	Asp	Leu	Val	Glu	Arg	Asp	Arg	Ala	100	105	110	
Thr	Leu	Ala	Ala	Leu	Glu	Thr	Met	Asp	Thr	Gly	Lys	Pro	Phe	Leu	His	115	120	125	
Ala	Phe	Phe	Ile	Asp	Leu	Glu	Gly	Cys	Ile	Arg	Thr	Leu	Arg	Tyr	Phe	130	135	140	
Ala	Gly	Trp	Ala	Asp	Lys	Ile	Gln	Gly	Lys	Thr	Ile	Pro	Thr	Asp	Asp	145	150	155	160
Asn	Val	Val	Cys	Phe	Thr	Arg	His	Glu	Pro	Ile	Gly	Val	Cys	Gly	Ala	165	170	175	
Ile	Thr	Pro	Trp	Asn	Phe	Pro	Leu	Leu	Met	Leu	Val	Trp	Lys	Leu	Ala	180	185	190	
Pro	Ala	Leu	Cys	Cys	Gly	Asn	Thr	Met	Val	Leu	Lys	Pro	Ala	Glu	Gln	195	200	205	
Thr	Pro	Leu	Thr	Ala	Leu	Tyr	Leu	Gly	Ser	Leu	Ile	Lys	Glu	Ala	Gly	210	215	220	
Phe	Pro	Pro	Gly	Val	Val	Asn	Ile	Val	Pro	Gly	Phe	Gly	Pro	Thr	Val	225	230	235	240
Gly	Ala	Ala	Ile	Ser	Ser	His	Pro	Gln	Ile	Asn	Lys	Ile	Ala	Phe	Thr	245	250	255	
Gly	Ser	Thr	Glu	Val	Gly	Lys	Leu	Val	Lys	Glu	Ala	Ala	Ser	Arg	Ser	260	265	270	
Asn	Leu	Lys	Arg	Val	Thr	Leu	Glu	Leu	Gly	Gly	Lys	Asn	Pro	Cys	Ile	275	280	285	
Val	Cys	Ala	Asp	Ala	Asp	Leu	Asp	Leu	Ala	Val	Glu	Cys	Ala	His	Gln	290	295	300	
Gly	Val	Phe	Phe	Asn	Gln	Gly	Gln	Cys	Cys	Thr	Ala	Ala	Ser	Arg	Val	305	310	315	320
Phe	Val	Glu	Glu	Gln	Val	Tyr	Ser	Glu	Phe	Val	Arg	Arg	Ser	Val	Glu	325	330	335	

Tyr Ala Lys Lys Arg Pro Val Gly Asp Pro Phe Asp Val Lys Thr Glu
 340 345 350
 Gln Gly Pro Gln Ile Asp Gln Lys Gln Phe Asp Lys Ile Leu Glu Leu
 355 360 365
 Ile Glu Ser Gly Lys Lys Glu Gly Ala Lys Leu Glu Cys Gly Gly Ser
 370 375 380
 Ala Met Glu Asp Lys Gly Leu Phe Ile Lys Pro Thr Val Phe Ser Glu
 385 390 395 400
 Val Thr Asp Asn Met Arg Ile Ala Lys Glu Glu Ile Phe Gly Pro Val
 405 410 415
 Gln Pro Ile Leu Lys Phe Lys Ser Ile Glu Glu Val Ile Lys Arg Ala
 420 425 430
 Asn Ser Thr Asp Tyr Gly Leu Thr Ala Ala Val Phe Thr Lys Asn Leu
 435 440 445
 Asp Lys Ala Leu Lys Leu Ala Ser Ala Leu Glu Ser Gly Thr Val Trp
 450 455 460
 Ile Asn Cys Tyr Asn Ala Leu Tyr Ala Gln Ala Pro Phe Gly Gly Phe
 465 470 475 480
 Lys Met Ser Gly Asn Gly Arg Glu Leu Gly Glu Tyr Ala Leu Ala Glu
 485 490 495
 Tyr Thr Glu Val Lys Thr Val Thr Ile Lys Leu Gly Asp Lys Asn Pro
 500 505 510

<210> 13
 <211> 1781
 <212> PRT
 <213> Homo sapiens

<400> 13

Met Gly Ala Gly Ser Ser Thr Glu Gln Arg Ser Pro Glu Gln Pro Pro
 1 5 10 15
 Glu Gly Ser Ser Thr Pro Ala Glu Pro Glu Pro Ser Gly Gly Gly Pro
 20 25 30
 Ser Ala Glu Ala Ala Pro Asp Thr Thr Ala Asp Pro Ala Ile Ala Ala
 35 40 45
 Ser Asp Pro Ala Thr Lys Leu Leu Gln Lys Asn Gly Gln Leu Ser Thr
 50 55 60
 Ile Asn Gly Val Ala Glu Gln Asp Glu Leu Ser Leu Gln Glu Gly Asp
 65 70 75 80
 Leu Asn Gly Gln Lys Gly Ala Leu Asn Gly Gln Gly Ala Leu Asn Ser
 85 90 95

Gln	Glu	Glu	Glu	Glu	Val	Ile	Val	Thr	Glu	Val	Gly	Gln	Arg	Asp	Ser			
			100					105					110					
Glu	Asp	Val	Ser	Glu	Arg	Asp	Ser	Asp	Lys	Glu	Met	Ala	Thr	Lys	Ser			
		115					120					125						
Ala	Val	Val	His	Asp	Ile	Thr	Asp	Asp	Gly	Gln	Glu	Glu	Asn	Arg	Asn			
		130				135					140							
Ile	Glu	Gln	Ile	Pro	Ser	Ser	Glu	Ser	Asn	Leu	Glu	Glu	Leu	Thr	Gln			
145					150					155					160			
Pro	Thr	Glu	Ser	Gln	Ala	Asn	Asp	Ile	Gly	Phe	Lys	Lys	Val	Phe	Lys			
				165					170					175				
Phe	Val	Gly	Phe	Lys	Phe	Thr	Val	Lys	Lys	Asp	Lys	Thr	Glu	Lys	Pro			
			180					185					190					
Asp	Thr	Val	Gln	Leu	Leu	Thr	Val	Lys	Lys	Asp	Glu	Gly	Glu	Gly	Ala			
		195					200					205						
Ala	Gly	Ala	Gly	Asp	His	Gln	Asp	Pro	Ser	Leu	Gly	Ala	Gly	Glu	Ala			
	210					215					220							
Ala	Ser	Lys	Glu	Ser	Glu	Pro	Lys	Gln	Ser	Thr	Glu	Lys	Pro	Glu	Glu			
225					230					235					240			
Thr	Leu	Lys	Arg	Glu	Gln	Ser	His	Ala	Glu	Ile	Ser	Pro	Pro	Ala	Glu			
				245					250					255				
Ser	Gly	Gln	Ala	Val	Glu	Glu	Cys	Lys	Glu	Glu	Gly	Glu	Glu	Lys	Gln			
			260					265					270					
Glu	Lys	Glu	Pro	Ser	Lys	Ser	Ala	Glu	Ser	Pro	Thr	Ser	Pro	Val	Thr			
		275					280					285						
Ser	Glu	Thr	Gly	Ser	Thr	Phe	Lys	Lys	Phe	Phe	Thr	Gln	Gly	Trp	Ala			
	290					295					300							
Gly	Trp	Arg	Lys	Lys	Thr	Ser	Phe	Arg	Lys	Pro	Lys	Glu	Asp	Glu	Val			
305					310					315					320			
Glu	Ala	Ser	Glu	Lys	Lys	Lys	Glu	Gln	Glu	Pro	Glu	Lys	Val	Asp	Thr			
				325				330						335				
Glu	Glu	Asp	Gly	Lys	Ala	Glu	Val	Ala	Ser	Glu	Lys	Leu	Thr	Ala	Ser			
			340					345					350					
Glu	Gln	Ala	His	Pro	Gln	Glu	Pro	Ala	Glu	Ser	Ala	His	Glu	Pro	Arg			
		355					360					365						
Leu	Ser	Ala	Glu	Tyr	Glu	Lys	Val	Glu	Leu	Pro	Ser	Glu	Glu	Gln	Val			
	370					375					380							
Ser	Gly	Ser	Gln	Gly	Pro	Ser	Glu	Glu	Lys	Pro	Ala	Pro	Leu	Ala	Thr			
385					390					395					400			

Glu	Val	Phe	Asp	Glu	Lys	Ile	Glu	Val	His	Gln	Glu	Glu	Val	Val	Ala			
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Glu	Val	His	Val	Ser	Thr	Val	Glu	Glu	Arg	Thr	Glu	Glu	Gln	Lys	Thr			
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Glu	Val	Glu	Glu	Thr	Ala	Gly	Ser	Val	Pro	Ala	Glu	Glu	Leu	Val	Gly			
		435					440					445						
Met	Asp	Ala	Glu	Pro	Gln	Glu	Ala	Glu	Pro	Ala	Lys	Glu	Leu	Val	Lys			
	450					455					460							
Leu	Lys	Glu	Thr	Cys	Val	Ser	Gly	Glu	Asp	Pro	Thr	Gln	Gly	Ala	Asp			
465					470				475						480			
Leu	Ser	Pro	Asp	Glu	Lys	Val	Leu	Ser	Lys	Pro	Pro	Glu	Gly	Val	Val			
				485					490					495				
Ser	Glu	Val	Glu	Met	Leu	Ser	Ser	Gln	Glu	Arg	Met	Lys	Val	Gln	Gly			
			500					505					510					
Ser	Pro	Leu	Lys	Lys	Leu	Phe	Thr	Ser	Thr	Gly	Leu	Lys	Lys	Leu	Ser			
		515					520					525						
Gly	Lys	Lys	Gln	Lys	Gly	Lys	Arg	Gly	Gly	Gly	Asp	Glu	Glu	Ser	Gly			
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Glu	His	Thr	Gln	Val	Pro	Ala	Asp	Ser	Pro	Asp	Ser	Gln	Glu	Glu	Gln			
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Lys	Gly	Glu	Ser	Ser	Ala	Ser	Ser	Pro	Glu	Glu	Pro	Glu	Glu	Ile	Thr			
				565				570						575				
Cys	Leu	Glu	Lys	Gly	Leu	Ala	Glu	Val	Gln	Gln	Asp	Gly	Glu	Ala	Glu			
			580					585					590					
Glu	Gly	Ala	Thr	Ser	Asp	Gly	Glu	Lys	Lys	Arg	Glu	Gly	Val	Thr	Pro			
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Trp	Ala	Ser	Phe	Lys	Lys	Met	Val	Thr	Pro	Lys	Lys	Arg	Val	Arg	Arg			
	610					615					620							
Pro	Ser	Glu	Ser	Asp	Lys	Glu	Asp	Glu	Leu	Asp	Lys	Val	Lys	Ser	Ala			
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Thr	Leu	Ser	Ser	Thr	Glu	Ser	Thr	Ala	Ser	Glu	Met	Gln	Glu	Glu	Met			
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Lys	Gly	Ser	Val	Glu	Glu	Pro	Lys	Pro	Glu	Glu	Pro	Lys	Arg	Lys	Val			
			660					665					670					
Asp	Thr	Ser	Val	Ser	Trp	Glu	Ala	Leu	Ile	Cys	Val	Gly	Ser	Ser	Lys			
		675					680					685						
Lys	Arg	Ala	Arg	Arg	Arg	Ser	Ser	Ser	Asp	Glu	Glu	Gly	Gly	Pro	Lys			
	690					695					700							

Ala 705	Met	Gly	Gly	Asp	His 710	Gln	Lys	Ala	Asp	Glu 715	Ala	Gly	Lys	Asp	Lys 720
Glu	Thr	Gly	Thr	Asp 725	Gly	Ile	Leu	Ala	Gly 730	Ser	Gln	Glu	His	Asp 735	Pro
Gly	Gln	Gly	Ser 740	Ser	Ser	Pro	Glu	Gln 745	Ala	Gly	Ser	Pro	Thr	Glu	Gly 750
Glu	Gly	Val 755	Ser	Thr	Trp	Glu	Ser 760	Phe	Lys	Arg	Leu	Val 765	Thr	Pro	Arg
Lys 770	Lys	Ser	Lys	Ser	Lys	Leu 775	Glu	Glu	Lys	Ser	Glu 780	Asp	Ser	Ile	Ala
Gly 785	Ser	Gly	Val	Glu	His 790	Ser	Thr	Pro	Asp	Thr 795	Glu	Pro	Gly	Lys	Glu 800
Glu	Ser	Trp	Val	Ser 805	Ile	Lys	Lys	Phe	Ile 810	Pro	Gly	Arg	Arg	Lys 815	Lys
Arg	Pro	Asp	Gly 820	Lys	Gln	Glu	Gln	Ala 825	Pro	Val	Glu	Asp	Ala 830	Gly	Pro
Thr	Gly 835	Ala	Asn	Glu	Asp	Asp	Ser 840	Asp	Val	Pro	Ala	Val 845	Val	Pro	Leu
Ser 850	Glu	Tyr	Asp	Ala	Val	Glu 855	Arg	Glu	Lys	Met	Glu 860	Ala	Gln	Gln	Ala
Gln 865	Lys	Gly	Ala	Glu	Gln 870	Pro	Glu	Gln	Lys	Ala 875	Ala	Thr	Glu	Val	Ser 880
Lys	Glu	Leu	Ser 885	Glu	Ser	Gln	Val	His 890	Met	Met	Ala	Ala	Ala	Val 895	Ala
Asp	Gly	Thr	Arg 900	Ala	Ala	Thr	Ile	Ile 905	Glu	Glu	Arg	Ser	Pro	Ser 910	Trp
Ile	Ser 915	Ala	Ser	Val	Thr	Glu	Pro 920	Leu	Glu	Gln	Val	Glu 925	Ala	Glu	Ala
Ala 930	Leu	Leu	Thr	Glu	Glu 935	Val	Leu	Glu	Arg	Glu 940	Val	Ile	Ala	Glu	Glu
Glu 945	Pro	Pro	Thr	Val	Thr 950	Glu	Pro	Leu	Pro	Glu 955	Asn	Arg	Glu	Ala	Arg 960
Gly	Asp	Thr	Val 965	Val	Ser	Glu	Ala	Glu 970	Leu	Thr	Pro	Glu	Ala	Val 975	Thr
Ala	Ala	Glu	Thr 980	Ala	Gly	Pro	Leu	Gly 985	Ser	Glu	Glu	Gly	Thr	Glu	Ala 990
Ser	Ala 995	Ala	Glu	Glu	Thr	Thr 1000	Glu	Met	Val	Ser	Ala	Val 1005	Ser	Gln	Leu

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 Glu Gly Gly Val Pro Asp Ile Glu Glu Gln Glu Arg Arg Thr Gln Glu
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 Val Leu Gln Ala Val Ala Glu Lys Val Lys Glu Glu Ser Gln Leu Pro
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 Gly Thr Gly Gly Pro Glu Asp Val Leu Gln Pro Val Gln Arg Ala Glu
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 Ala Glu Arg Pro Glu Glu Gln Ala Glu Ala Ser Gly Leu Lys Lys Glu
 1075 1080 1085
 Thr Asp Val Val Leu Lys Val Asp Ala Gln Glu Ala Lys Thr Glu Pro
 1090 1095 1100
 Phe Thr Gln Gly Lys Val Val Gly Gln Thr Thr Pro Glu Ser Phe Glu
 1105 1110 1115 1120
 Lys Ala Pro Gln Val Thr Glu Ser Ile Glu Ser Ser Glu Leu Val Thr
 1125 1130 1135
 Thr Cys Gln Ala Glu Thr Leu Ala Gly Val Lys Ser Gln Glu Met Val
 1140 1145 1150
 Met Glu Gln Ala Ile Pro Pro Asp Ser Val Glu Thr Pro Thr Asp Ser
 1155 1160 1165
 Glu Thr Asp Gly Ser Thr Pro Val Ala Asp Phe Asp Ala Pro Gly Thr
 1170 1175 1180
 Thr Gln Lys Asp Glu Ile Val Glu Ile His Glu Glu Asn Glu Val Ala
 1185 1190 1195 1200
 Ser Gly Thr Gln Ser Gly Gly Thr Glu Ala Glu Ala Val Pro Ala Gln
 1205 1210 1215
 Lys Glu Arg Pro Pro Ala Pro Ser Ser Phe Val Phe Gln Glu Glu Thr
 1220 1225 1230
 Lys Glu Gln Ser Lys Met Glu Asp Thr Leu Glu His Thr Asp Lys Glu
 1235 1240 1245
 Val Ser Val Glu Thr Val Ser Ile Leu Ser Lys Thr Glu Gly Thr Gln
 1250 1255 1260
 Glu Ala Asp Gln Tyr Ala Asp Glu Lys Thr Lys Asp Val Pro Phe Phe
 1265 1270 1275 1280
 Glu Gly Leu Glu Gly Ser Ile Asp Thr Gly Ile Thr Val Ser Arg Glu
 1285 1290 1295
 Lys Val Thr Glu Val Ala Leu Lys Gly Glu Gly Thr Glu Glu Ala Glu
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Cys Lys Lys Asp Asp Ala Leu Glu Leu Gln Ser His Ala Lys Ser Pro
 1315 1320 1325
 Pro Ser Pro Val Glu Arg Glu Met Val Val Gln Val Glu Arg Glu Lys
 1330 1335 1340
 Thr Glu Ala Glu Pro Thr His Val Asn Glu Glu Lys Leu Glu His Glu
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 Thr Ala Val Thr Val Ser Glu Glu Val Ser Lys Gln Leu Leu Gln Thr
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 Val Asn Val Pro Ile Ile Asp Gly Ala Lys Glu Val Ser Ser Leu Glu
 1380 1385 1390
 Gly Ser Pro Pro Pro Cys Leu Gly Gln Glu Glu Ala Val Cys Thr Lys
 1395 1400 1405
 Ile Gln Val Gln Ser Ser Glu Ala Ser Phe Thr Leu Thr Ala Ala Ala
 1410 1415 1420
 Glu Glu Glu Lys Val Leu Gly Glu Thr Ala Asn Ile Leu Glu Thr Gly
 1425 1430 1435 1440
 Glu Thr Leu Glu Pro Ala Gly Ala His Leu Val Leu Glu Glu Lys Ser
 1445 1450 1455
 Ser Glu Lys Asn Glu Asp Phe Ala Ala His Pro Gly Glu Asp Ala Val
 1460 1465 1470
 Pro Thr Gly Pro Asp Cys Gln Ala Lys Ser Thr Pro Val Ile Val Ser
 1475 1480 1485
 Ala Thr Thr Lys Lys Gly Leu Ser Ser Asp Leu Glu Gly Glu Lys Thr
 1490 1495 1500
 Thr Ser Leu Lys Trp Lys Ser Asp Glu Val Asp Glu Gln Val Ala Cys
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 Gly Ile Leu Glu Leu Glu Thr Lys Ser Ser Lys Leu Val Gln Asn Ile
 1540 1545 1550
 Ile Gln Thr Ala Val Asp Gln Phe Val Arg Thr Glu Glu Thr Ala Thr
 1555 1560 1565
 Glu Met Leu Thr Ser Glu Leu Gln Thr Gln Ala His Val Ile Lys Ala
 1570 1575 1580
 Asp Ser Gln Asp Ala Gly Gln Glu Thr Glu Lys Glu Gly Glu Glu Pro
 1585 1590 1595 1600
 Gln Ala Ser Ala Gln Asp Glu Thr Pro Ile Thr Ser Ala Lys Glu Glu
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Ser Glu Ser Thr Ala Val Gly Gln Ala His Ser Asp Ile Ser Lys Asp
 1620 1625 1630
 Met Ser Glu Ala Ser Glu Lys Thr Met Thr Val Glu Val Glu Gly Ser
 1635 1640 1645
 Thr Val Asn Asp Gln Gln Leu Glu Glu Val Val Leu Pro Ser Glu Glu
 1650 1655 1660
 Glu Gly Gly Gly Ala Gly Thr Lys Ser Val Pro Glu Asp Asp Gly His
 1665 1670 1675 1680
 Ala Leu Leu Ala Glu Arg Ile Glu Lys Ser Leu Val Glu Pro Lys Glu
 1685 1690 1695
 Asp Glu Lys Gly Asp Asp Val Asp Asp Pro Glu Asn Gln Asn Ser Ala
 1700 1705 1710
 Leu Ala Asp Thr Asp Ala Ser Gly Gly Leu Thr Lys Glu Ser Pro Asp
 1715 1720 1725
 Thr Asn Gly Pro Lys Gln Lys Glu Lys Glu Asp Ala Gln Glu Val Glu
 1730 1735 1740
 Leu Gln Glu Gly Lys Val His Ser Glu Ser Asp Lys Ala Ile Thr Pro
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 <213> Homo sapiens

<400> 14
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 35 40 45
 Gly Asp Asp Phe Val Ser Pro Ala Leu Glu Leu Ser Gly Ala Leu Arg
 50 55 60
 Phe Tyr Asp Arg Ser Asp Ile Asp Ala Val Tyr Val Thr Thr Asn Gly
 65 70 75 80
 Ile Ile Ala Thr Ser Glu Pro Pro Ala Lys Glu Ser His Pro Gly Leu
 85 90 95

Phe	Pro	Pro	Thr	Phe	Gly	Ala	Val	Ala	Pro	Phe	Leu	Ala	Asp	Leu	Asp			
			100					105					110					
Thr	Thr	Asp	Gly	Leu	Gly	Lys	Val	Tyr	Tyr	Arg	Glu	Asp	Leu	Ser	Pro			
		115					120					125						
Ser	Ile	Thr	Gln	Arg	Ala	Ala	Glu	Cys	Val	His	Arg	Gly	Phe	Pro	Glu			
	130					135					140							
Ile	Ser	Phe	Gln	Pro	Ser	Ser	Ala	Val	Val	Val	Thr	Trp	Glu	Ser	Val			
145					150				155						160			
Ala	Pro	Tyr	Gln	Gly	Pro	Ser	Arg	Asp	Pro	Asp	Gln	Lys	Gly	Lys	Arg			
			165					170					175					
Asn	Thr	Phe	Gln	Ala	Val	Leu	Ala	Ser	Ser	Asp	Ser	Ser	Ser	Tyr	Ala			
		180						185					190					
Ile	Phe	Leu	Tyr	Pro	Glu	Asp	Gly	Leu	Gln	Phe	His	Thr	Thr	Phe	Ser			
	195						200					205						
Lys	Lys	Glu	Asn	Asn	Gln	Val	Pro	Ala	Val	Val	Ala	Phe	Ser	Gln	Gly			
	210					215					220							
Ser	Val	Gly	Phe	Leu	Trp	Lys	Ser	Asn	Gly	Ala	Tyr	Asn	Ile	Phe	Ala			
225					230					235					240			
Asn	Asp	Arg	Glu	Ser	Ile	Glu	Asn	Leu	Ala	Lys	Ser	Ser	Asn	Ser	Gly			
			245					250					255					
Gln	Gln	Gly	Val	Trp	Val	Phe	Glu	Ile	Gly	Ser	Pro	Ala	Thr	Thr	Asn			
		260						265					270					
Gly	Val	Val	Pro	Ala	Asp	Val	Ile	Leu	Gly	Thr	Glu	Asp	Gly	Ala	Glu			
	275						280					285						
Tyr	Asp	Asp	Glu	Asp	Glu	Asp	Tyr	Asp	Leu	Ala	Thr	Thr	Arg	Leu	Gly			
	290					295					300							
Leu	Glu	Asp	Val	Gly	Thr	Thr	Pro	Phe	Ser	Tyr	Lys	Ala	Leu	Arg	Arg			
305					310					315					320			
Gly	Gly	Ala	Asp	Thr	Tyr	Ser	Val	Pro	Ser	Val	Leu	Ser	Pro	Arg	Arg			
			325					330					335					
Ala	Ala	Thr	Glu	Arg	Pro	Leu	Gly	Pro	Pro	Thr	Glu	Arg	Thr	Arg	Ser			
		340					345						350					
Phe	Gln	Leu	Ala	Val	Glu	Thr	Phe	His	Gln	Gln	His	Pro	Gln	Val	Ile			
	355						360					365						
Asp	Val	Asp	Glu	Val	Glu	Glu	Thr	Gly	Val	Val	Phe	Ser	Tyr	Asn	Thr			
	370					375					380							
Asp	Ser	Arg	Gln	Thr	Cys	Ala	Asn	Asn	Arg	His	Gln	Cys	Ser	Val	His			
385					390					395					400			

Ala	Glu	Cys	Arg	Asp	Tyr	Ala	Thr	Gly	Phe	Cys	Cys	Ser	Cys	Val	Ala		
				405					410					415			
Gly	Tyr	Thr	Gly	Asn	Gly	Arg	Gln	Cys	Val	Ala	Glu	Gly	Ser	Pro	Gln		
			420					425					430				
Arg	Val	Asn	Gly	Lys	Val	Lys	Gly	Arg	Ile	Phe	Val	Gly	Ser	Ser	Gln		
		435					440					445					
Val	Pro	Ile	Val	Phe	Glu	Asn	Thr	Asp	Leu	His	Ser	Tyr	Val	Val	Met		
	450					455					460						
Asn	His	Gly	Arg	Ser	Tyr	Thr	Ala	Ile	Ser	Thr	Ile	Pro	Glu	Thr	Val		
465					470					475					480		
Gly	Tyr	Ser	Leu	Leu	Pro	Leu	Ala	Pro	Val	Gly	Gly	Ile	Ile	Gly	Trp		
			485						490					495			
Met	Phe	Ala	Val	Glu	Gln	Asp	Gly	Phe	Lys	Asn	Gly	Phe	Ser	Ile	Thr		
		500						505					510				
Gly	Gly	Glu	Phe	Thr	Arg	Gln	Ala	Glu	Val	Thr	Phe	Val	Gly	His	Pro		
		515					520					525					
Gly	Asn	Leu	Val	Ile	Lys	Gln	Arg	Phe	Ser	Gly	Ile	Asp	Glu	His	Gly		
	530					535					540						
His	Leu	Thr	Ile	Asp	Thr	Glu	Leu	Glu	Gly	Arg	Val	Pro	Gln	Ile	Pro		
545					550					555					560		
Phe	Gly	Ser	Ser	Val	His	Ile	Glu	Pro	Tyr	Thr	Glu	Leu	Tyr	His	Tyr		
				565					570					575			
Ser	Thr	Ser	Val	Ile	Thr	Ser	Ser	Ser	Thr	Arg	Glu	Tyr	Thr	Val	Thr		
			580					585					590				
Glu	Pro	Glu	Arg	Asp	Gly	Ala	Ser	Pro	Ser	Arg	Ile	Tyr	Thr	Tyr	Gln		
		595					600					605					
Trp	Arg	Gln	Thr	Ile	Thr	Phe	Gln	Glu	Cys	Val	His	Asp	Asp	Ser	Arg		
	610					615					620						
Pro	Ala	Leu	Pro	Ser	Thr	Gln	Gln	Leu	Ser	Val	Asp	Ser	Val	Phe	Val		
625					630					635					640		
Leu	Tyr	Asn	Gln	Glu	Glu	Lys	Ile	Leu	Arg	Tyr	Ala	Phe	Ser	Asn	Ser		
			645					650						655			
Ile	Gly	Pro	Val	Arg	Glu	Gly	Ser	Pro	Asp	Ala	Leu	Gln	Asn	Pro	Cys		
			660					665					670				
Tyr	Ile	Gly	Thr	His	Gly	Cys	Asp	Thr	Asn	Ala	Ala	Cys	Arg	Pro	Gly		
		675					680					685					
Pro	Arg	Thr	Gln	Phe	Thr	Cys	Glu	Cys	Ser	Ile	Gly	Phe	Arg	Gly	Asp		
	690					695					700						

Gly	Arg	Thr	Cys	Tyr	Asp	Ile	Asp	Glu	Cys	Ser	Glu	Gln	Pro	Ser	Val	705	710	715	720
Cys	Gly	Ser	His	Thr	Ile	Cys	Asn	Asn	His	Pro	Gly	Thr	Phe	Arg	Cys	725	730	735	
Glu	Cys	Val	Glu	Gly	Tyr	Gln	Phe	Ser	Asp	Glu	Gly	Thr	Cys	Val	Ala	740	745	750	
Val	Val	Asp	Gln	Arg	Pro	Ile	Asn	Tyr	Cys	Glu	Thr	Gly	Leu	His	Asn	755	760	765	
Cys	Asp	Ile	Pro	Gln	Arg	Ala	Gln	Cys	Ile	Tyr	Thr	Gly	Gly	Ser	Ser	770	775	780	
Tyr	Thr	Cys	Ser	Cys	Leu	Pro	Gly	Phe	Ser	Gly	Asp	Gly	Gln	Ala	Cys	785	790	795	800
Gln	Asp	Val	Asp	Glu	Cys	Gln	Pro	Ser	Arg	Cys	His	Pro	Asp	Ala	Phe	805	810	815	
Cys	Tyr	Asn	Thr	Pro	Gly	Ser	Phe	Thr	Cys	Gln	Cys	Lys	Pro	Gly	Tyr	820	825	830	
Gln	Gly	Asp	Gly	Phe	Arg	Cys	Val	Pro	Gly	Glu	Val	Glu	Lys	Thr	Arg	835	840	845	
Cys	Gln	His	Glu	Arg	Glu	His	Ile	Leu	Gly	Ala	Ala	Gly	Ala	Thr	Asp	850	855	860	
Pro	Gln	Arg	Pro	Ile	Pro	Pro	Gly	Leu	Phe	Val	Pro	Glu	Cys	Asp	Ala	865	870	875	880
His	Gly	His	Tyr	Ala	Pro	Thr	Gln	Cys	His	Gly	Ser	Thr	Gly	Tyr	Cys	885	890	895	
Trp	Cys	Val	Asp	Arg	Asp	Gly	Arg	Glu	Val	Glu	Gly	Thr	Arg	Thr	Arg	900	905	910	
Pro	Gly	Met	Thr	Pro	Pro	Cys	Leu	Ser	Thr	Val	Ala	Pro	Pro	Ile	His	915	920	925	
Gln	Gly	Pro	Ala	Val	Pro	Thr	Ala	Val	Ile	Pro	Leu	Pro	Pro	Gly	Thr	930	935	940	
His	Leu	Leu	Phe	Ala	Gln	Thr	Gly	Lys	Ile	Glu	Arg	Leu	Pro	Leu	Glu	945	950	955	960
Gly	Asn	Thr	Met	Arg	Lys	Thr	Glu	Ala	Lys	Ala	Phe	Leu	His	Val	Pro	965	970	975	
Ala	Lys	Val	Ile	Ile	Gly	Leu	Ala	Phe	Asp	Cys	Val	Asp	Lys	Met	Val	980	985	990	
Tyr	Trp	Thr	Asp	Ile	Thr	Glu	Pro	Ser	Ile	Gly	Arg	Ala	Ser	Leu	His	995	1000	1005	

Gly Gly Glu Pro Thr Thr Ile Ile Arg Gln Asp Leu Gly Ser Pro Glu
1010 1015 1020

Gly Ile Ala Val Asp His Leu Gly Arg Asn Ile Phe Trp Thr Asp Ser
1025 1030 1035 1040

Asn Leu Asp Arg Ile Glu Val Ala Lys Leu Asp Gly Thr Gln Arg Arg
1045 1050 1055

Val Leu Phe Glu Thr Asp Leu Val Asn Pro Arg Gly Ile Val Thr Asp
1060 1065 1070

Ser Val Arg Gly Asn Leu Tyr Trp Thr Asp Trp Asn Arg Asp Asn Pro
1075 1080 1085

Lys Ile Glu Thr Ser Tyr Met Asp Gly Thr Asn Arg Arg Ile Leu Val
1090 1095 1100

Gln Asp Asp Leu Gly Leu Pro Asn Gly Leu His Phe Asp Ala Phe Ser
1105 1110 1115 1120

Ser Gln Leu Cys Trp Val Asp Ala Gly Thr Asn Arg Ala Glu Cys Leu
1125 1130 1135

Asn Pro Ser Gln Pro Ser Arg Arg Lys Ala Leu Glu Gly Leu Gln Tyr
1140 1145 1150

Pro Phe Ala Val Thr Ser Tyr Gly Lys Asn Leu Tyr Phe Thr Asp Trp
1155 1160 1165

Lys Met Asn Ser Val Val Ala Leu Asp Leu Ala Ile Ser Lys Glu Thr
1170 1175 1180

Asp Ala Phe Gln Pro His Lys Gln Thr Arg Leu Tyr Gly Ile Thr Thr
1185 1190 1195 1200

Ala Leu Ser Gln Cys Pro Gln Gly His Asn Tyr Cys Ser Val Asn Asn
1205 1210 1215

Gly Gly Cys Thr His Leu Cys Leu Ala Thr Pro Gly Ser Arg Thr Cys
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Arg Cys Pro Asp Asn Thr Leu Gly Val Asp Cys Ile Glu Arg Lys
1235 1240 1245

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<211> 997

<212> PRT

<213> Homo sapiens

<400> 15

Met Pro Ser Glu Lys Lys Ile Ser Ser Ala Asn Asp Cys Ile Ser Phe
1 5 10 15

Met Gln Ala Gly Cys Glu Leu Lys Lys Val Arg Pro Asn Ser Arg Ile
20 25 30

Tyr	Asn	Arg	Phe	Phe	Thr	Leu	Asp	Thr	Asp	Leu	Gln	Ala	Leu	Arg	Trp
		35					40					45			
Glu	Pro	Ser	Lys	Lys	Asp	Leu	Glu	Lys	Ala	Lys	Leu	Asp	Ile	Ser	Ala
	50					55					60				
Ile	Lys	Glu	Ile	Arg	Leu	Gly	Lys	Asn	Thr	Glu	Thr	Phe	Thr	Asn	Asn
65					70					75					80
Gly	Leu	Ala	Asp	Gln	Ile	Cys	Glu	Asp	Cys	Ala	Phe	Ser	Ile	Leu	His
				85					90					95	
Gly	Glu	Asn	Tyr	Glu	Ser	Leu	Asp	Leu	Val	Ala	Asn	Ser	Ala	Asp	Val
			100					105					110		
Ala	Asn	Ile	Trp	Val	Ser	Gly	Leu	Arg	Tyr	Leu	Val	Ser	Arg	Ser	Lys
		115					120					125			
Gln	Pro	Leu	Asp	Phe	Met	Glu	Gly	Asn	Gln	Asn	Thr	Pro	Arg	Phe	Met
	130					135					140				
Trp	Leu	Lys	Thr	Val	Phe	Glu	Ala	Ala	Asp	Val	Asp	Gly	Asn	Gly	Ile
145					150					155					160
Met	Leu	Glu	Asp	Thr	Ser	Val	Glu	Leu	Ile	Lys	Gln	Leu	Asn	Pro	Thr
				165					170					175	
Leu	Lys	Glu	Ala	Lys	Ile	Arg	Leu	Lys	Phe	Lys	Glu	Ile	Gln	Lys	Ser
			180					185					190		
Lys	Glu	Lys	Leu	Thr	Thr	Arg	Val	Thr	Glu	Glu	Glu	Phe	Cys	Glu	Ala
		195					200					205			
Phe	Cys	Glu	Leu	Cys	Thr	Arg	Pro	Glu	Val	Tyr	Phe	Leu	Leu	Val	Gln
	210					215					220				
Ile	Ser	Lys	Asn	Lys	Glu	Tyr	Leu	Asp	Ala	Asn	Asp	Leu	Met	Leu	Phe
225					230					235					240
Leu	Glu	Ala	Glu	Gln	Gly	Val	Thr	His	Ile	Thr	Glu	Asp	Ile	Cys	Leu
				245					250					255	
Asp	Ile	Ile	Arg	Arg	Tyr	Glu	Leu	Ser	Glu	Glu	Gly	Arg	Gln	Lys	Gly
			260					265					270		
Phe	Leu	Ala	Ile	Asp	Gly	Phe	Thr	Gln	Tyr	Leu	Leu	Ser	Ser	Glu	Cys
		275					280					285			
Asp	Ile	Phe	Asp	Pro	Glu	Gln	Lys	Lys	Val	Ala	Gln	Asp	Met	Thr	Gln
	290					295					300				
Pro	Leu	Ser	His	Tyr	Tyr	Ile	Asn	Ala	Ser	His	Asn	Thr	Tyr	Leu	Ile
305					310					315					320
Glu	Asp	Gln	Phe	Arg	Gly	Pro	Ala	Asp	Ile	Asn	Gly	Tyr	Ile	Arg	Ala
				325					330					335	

Leu	Lys	Met	Gly	Cys	Arg	Ser	Val	Glu	Leu	Asp	Val	Ser	Asp	Gly	Ser	340	345	350
Asp	Asn	Glu	Pro	Ile	Leu	Cys	Asn	Arg	Asn	Asn	Met	Thr	Thr	His	Val	355	360	365
Ser	Phe	Arg	Ser	Val	Ile	Glu	Val	Ile	Asn	Lys	Phe	Ala	Phe	Val	Ala	370	375	380
Ser	Glu	Tyr	Pro	Leu	Ile	Leu	Cys	Leu	Gly	Asn	His	Cys	Ser	Leu	Pro	385	390	400
Gln	Gln	Lys	Val	Met	Ala	Gln	Gln	Met	Lys	Lys	Val	Phe	Gly	Asn	Lys	405	410	415
Leu	Tyr	Thr	Glu	Ala	Pro	Leu	Pro	Ser	Glu	Ser	Tyr	Leu	Pro	Ser	Pro	420	425	430
Glu	Lys	Leu	Lys	Arg	Met	Ile	Ile	Val	Lys	Gly	Lys	Lys	Leu	Pro	Ser	435	440	445
Asp	Pro	Asp	Val	Leu	Glu	Gly	Glu	Val	Thr	Asp	Glu	Asp	Glu	Glu	Ala	450	455	460
Gln	Met	Ser	Arg	Arg	Met	Ser	Val	Asp	Tyr	Asn	Gly	Glu	Gln	Lys	Gln	465	470	475
Ile	Arg	Leu	Cys	Arg	Glu	Leu	Ser	Asp	Leu	Val	Ser	Ile	Cys	Lys	Ser	485	490	495
Val	Gln	Tyr	Arg	Asp	Phe	Glu	Leu	Ser	Met	Lys	Ser	Gln	Asn	Tyr	Trp	500	505	510
Glu	Met	Cys	Ser	Phe	Ser	Glu	Thr	Glu	Ala	Ser	Arg	Ile	Ala	Asn	Glu	515	520	525
Tyr	Pro	Glu	Asp	Phe	Val	Asn	Tyr	Asn	Lys	Lys	Phe	Leu	Ser	Arg	Ile	530	535	540
Tyr	Pro	Ser	Ala	Met	Arg	Ile	Asp	Ser	Ser	Asn	Leu	Asn	Pro	Gln	Asp	545	550	555
Phe	Trp	Asn	Cys	Gly	Cys	Gln	Ile	Val	Ala	Met	Asn	Phe	Gln	Thr	Pro	565	570	575
Gly	Pro	Met	Met	Asp	Leu	His	Thr	Gly	Trp	Phe	Leu	Gln	Asn	Gly	Gly	580	585	590
Cys	Gly	Tyr	Val	Leu	Arg	Pro	Ser	Ile	Met	Arg	Asp	Glu	Val	Ser	Tyr	595	600	605
Phe	Ser	Ala	Asn	Thr	Lys	Gly	Ile	Leu	Pro	Gly	Val	Ser	Pro	Leu	Ala	610	615	620
Leu	His	Ile	Lys	Ile	Ile	Ser	Gly	Gln	Asn	Phe	Pro	Lys	Pro	Lys	Gly	625	630	635
																		640

Ala	Cys	Ala	Lys	Gly	Asp	Val	Ile	Asp	Pro	Tyr	Val	Cys	Ile	Glu	Ile	645	650	655
His	Gly	Ile	Pro	Ala	Asp	Cys	Ser	Glu	Gln	Arg	Thr	Lys	Thr	Val	Gln	660	665	670
Gln	Asn	Ser	Asp	Asn	Pro	Ile	Phe	Asp	Glu	Thr	Phe	Glu	Phe	Gln	Val	675	680	685
Asn	Leu	Pro	Glu	Leu	Ala	Met	Ile	Arg	Phe	Val	Val	Leu	Asp	Asp	Asp	690	695	700
Tyr	Ile	Gly	Asp	Glu	Phe	Ile	Gly	Gln	Tyr	Thr	Ile	Pro	Phe	Glu	Cys	705	710	715
Leu	Gln	Pro	Gly	Tyr	Arg	His	Val	Pro	Leu	Arg	Ser	Phe	Val	Gly	Asp	725	730	735
Ile	Met	Glu	His	Val	Thr	Leu	Phe	Val	His	Ile	Ala	Ile	Thr	Asn	Arg	740	745	750
Ser	Gly	Gly	Gly	Lys	Ala	Gln	Lys	Arg	Ser	Leu	Ser	Val	Arg	Met	Gly	755	760	765
Lys	Lys	Val	Arg	Glu	Tyr	Thr	Met	Leu	Arg	Asn	Ile	Gly	Leu	Lys	Thr	770	775	780
Ile	Asp	Asp	Ile	Phe	Lys	Ile	Ala	Val	His	Pro	Leu	Arg	Glu	Ala	Ile	785	790	795
Asp	Met	Arg	Glu	Asn	Met	Gln	Asn	Ala	Ile	Val	Ser	Ile	Lys	Glu	Leu	805	810	815
Cys	Gly	Leu	Pro	Pro	Ile	Ala	Ser	Leu	Lys	Gln	Cys	Leu	Leu	Thr	Leu	820	825	830
Ser	Ser	Arg	Leu	Ile	Thr	Ser	Asp	Asn	Thr	Pro	Ser	Val	Ser	Leu	Val	835	840	845
Met	Lys	Asp	Ser	Phe	Pro	Tyr	Leu	Glu	Pro	Leu	Gly	Ala	Ile	Pro	Asp	850	855	860
Val	Gln	Lys	Lys	Met	Leu	Thr	Ala	Tyr	Asp	Leu	Met	Ile	Gln	Glu	Ser	865	870	875
Arg	Phe	Leu	Ile	Glu	Met	Ala	Asp	Thr	Val	Gln	Glu	Lys	Ile	Val	Gln	885	890	895
Cys	Gln	Lys	Ala	Gly	Met	Glu	Phe	His	Glu	Glu	Leu	His	Asn	Leu	Gly	900	905	910
Ala	Lys	Glu	Gly	Leu	Lys	Gly	Arg	Lys	Leu	Asn	Lys	Ala	Thr	Glu	Ser	915	920	925
Phe	Ala	Trp	Asn	Ile	Thr	Val	Leu	Lys	Gly	Gln	Gly	Asp	Leu	Leu	Lys	930	935	940

Asn Ala Lys Asn Glu Ala Ile Glu Asn Met Lys Gln Ile Gln Leu Ala
945 950 955 960

Cys Leu Ser Cys Gly Leu Ser Lys Ala Pro Ser Ser Ser Ala Glu Ala
965 970 975

Lys Ser Lys Arg Ser Leu Glu Ala Ile Glu Glu Lys Glu Ser Ser Glu
980 985 990

Glu Asn Gly Lys Leu
995